EE&G ENVIRONMENTAL SERVICES, LLC

SITE REHABILIATION PLAN

OF

MIAMI FREEDOM PARK
(INTERNATIONAL LINKS MELREESE COUNTRY CLUB)
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
FOLIO NO: 30-3129-000-0160, 30-3129-000-0050,
01-3132-000-0080, and 01-3132-000-0090 (partial)
DERM Facility ID: AW-284/HWR-594

Prepared For:

Miami-Dade County Department of Regulatory and Economic Resources
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SECTION 1.0
INTRODUCTION

EE&G Environmental Services, LLC (EE&G) was retained by Greenberg Traurig, P.A., on behalf of Miami Freedom Park, LLC, to prepare this Site Rehabilitation Plan (SRP) for the proposed Miami Freedom Park, which is the current location of the International Links Melreese Country Club. The approximately 160-acre golf course is located at 1802 Northwest 37th Avenue, Miami, Miami-Dade County, Florida 33125. The property was identified by the Miami-Dade County Property Appraiser with folio numbers: 30-3129-000-0160, 30-3129-000-0050, 01-3132-000-0080 and 01-3132-000-0090 (partial – northern half). Miami-Dade County Property Appraiser information is provided in **Appendix A**. The property is developed with an 18-hole golf course, a driving range, a clubhouse and maintenance building, a small pump-house building and restroom building, and scattered man-made lakes. A Site Location/Topographic Map is provided as **Figure 1**. A recent aerial photograph is provided as **Figure 2**. A Site Layout Map is provided as **Figure 3**.

The property is a known contaminated site, and is currently tracked by the Miami-Dade County Division of Environmental Resources Management (DERM) using AW-284, and shares a regulatory file with the southeastern adjoining Grapeland Heights Park (HWR-594). This SRP includes updated site assessment data collected as part of the recent environmental due diligence testing. Additionally, this SRP includes a conceptual site rehabilitation strategy to address the contamination using Engineering Control and Institutional Control tools to achieve a No Further Action with Conditions (NFAC) closure.

SECTION 2.0
AREA SETTING & HYDROGEOLOGIC SETTING

The property is surrounded to the east by a residential neighborhood, to the southeast by Grapeland Heights Park, to the south by Interstate 836 (beyond which is a residential neighborhood, to the west NW 42nd Avenue (beyond which is a parking lot), to the northwest by Miami International Airport, and to the north by a canal (beyond which was a hotel and the MIA Intermodal Station).

The regional hydrogeology was assessed by reviewing the U.S. Geological Survey Water Resources Investigations Report No. 90-4108, *Hydrogeology of the Surficial Aquifer System, Dade County, Florida,* dated 1991. The surficial aquifer system, in which an unconfined groundwater flow system exists, is comprised of sediments from surface grade to the top of a regionally persistent zone of low permeability called the intermediate confining unit. The aquifer system materials vary from clays to cavernous limestone in composition, with the upper, more permeable sediments grouped together as the Biscayne Aquifer. The surficial aquifer is approximately 310-feet deep beneath the *Property*, and consisted of the following formations:

- The Pamlico Sand, quartz sand that included marine deposits from grade to approximately sea level.
- The Miami Limestone Formation (formerly the Miami Oolite Formation), a limestone formation consisted of an oolitic and a bryozoan facies from sea level to a depth of approximately 10-feet BLS.
- The Anastasia Formation, sand with sandstone concretions and marine shells, documented from approximately 10 to 40-feet BLS.
- Key Largo Limestone, limestone with rock fragments and marine shells documented from approximately 40 to 60-feet BLS.
- The Fort Thompson Formation comprised of a combination of sand, limestone, marine shells and some rock fragments documented from approximately 60 to 110-feet BLS.
- The Tamiami Formation comprised of unconsolidated sandstone, porous limestone, and marine shell from approximately 110 to 230-feet BLS.
- The Hawthorn Formation comprised of limestone and marine shells, which forms the base of the Biscayne Aquifer at approximately 230 to 310-feet BLS in the vicinity of the *Property*.

The property was not located within a Maximum Drawdown Area of a Miami-Dade County Wellfield Protection area. Depth-to-groundwater was encountered on the average at 4 to 6-feet BLS, with higher/lower measurements as a result of the irregular topography.

SECTION 3.0
REGULATORY & HISTORICAL REVIEW

The following is a summary of the site history and regulatory history based on a review of the Miami-Dade County DERM regulatory file. **Appendix B** contains excerpts of aerial photographs and previous assessment documentation.

Based on historical research, the property appeared to be utilized as agricultural and/or pastoral land circa 1938. The 1951 aerial photograph documented evidence of widespread dumping of incineration ash and debris across the property. By the early-1960s the property was redeveloped with a golf course, and lakes were excavated. In the mid-1990s, the golf course was renovated, the topography re-worked, and lakes modified (current condition). The club house was added in the late-2000s.

The following is a summary of the DERM regulatory file review:

Melreese Golf Course (Ash Investigation)
1802 Northwest 37th Avenue
DERM Facility ID: AW-284/HWR-594

- DERM has a combined regulatory file for the Melreese Golf Course (AQ-284) and the southeastern adjoining Grapeland Heights Park (HWR-594).

- The presence of incineration debris was initially reported to DERM in March 2005 during an evaluation of the southeastern adjoining Grapeland Heights Park prior to its redevelopment to the current park configuration. Petro Hydro initially conducted the excavation of 12 test pits to assess for the presence of previously landfilled and improperly buried materials. Due to the initial western and northern boundary test results, the assessment expanded to the Melreese Golf Course.

- A Limited Phase II ESA, prepared by Petro Hydro and dated October 26, 2005, was the first documentation of incineration debris on the Melreese Golf Course. A Supplemental Site Assessment Report (SSAR), dated September 14, 2006, was conducted to further delineate the impact of the incineration debris on the soil and groundwater at the *Property*.

- Primary contaminants of concern in soils included arsenic, lead, dioxins/furans, and benzo(a)pyrene (BaP), which are common incineration ash compounds.

- The presence of arsenic in the soils was also attributed to golf course application of agrochemicals. The SSAR proposed that the arsenic was consistent with other municipal golf courses that were part of a Miami-Dade County DERM study, and that the arsenic was primarily attributed to the legal application of herbicides by the golf course.

  - EE&G took the arsenic results from Petro Hydro's SSAR and calculated a 95% Upper Confidence Limit (UCL) of 15.11 mg/Kg for the 0 to 0.5-feet BLS interval.

- DERM approved the SSAR in February 2007. DERM requested a Remedial Action Plan (RAP) to be submitted. DERM sent numerous letters requesting a response, and in

2013 sent an enforcement letter, and conducted a site inspection during which they identified areas of exposed debris.

- In response, SCS Engineers were retained and provided the April 16, 2014 Corrective Action Plan and "temporary" ECP that would mitigate exposure of workers and golfers to solid waste/incineration debris. SCS indicated that the existing fairway/green/sand trap cover provided reasonable protection from exposure to the buried waste. In addition, three to four inches of mulch would be maintained in the landscaped/tree areas. Routine inspections, conducted by golf course maintenance staff would be required to ensure ECP measures were in place.

- DERM approved the ECP on December 8, 2015, and has required that periodic inspections of the golf course areas be conducted and updated mulch-covering for the base of trees.

- Surface water samples from lakes did not contain concentrations of arsenic or lead above the applicable surface water cleanup target levels.

- Groundwater samples were analyzed for arsenic, barium, copper, lead, PAHs, Dioxins/Furans, and PCBs. None of the tested constituents were detected Groundwater Cleanup Target Level (GCTL), with the exception of arsenic. SCS Engineers conducted a groundwater Monitoring Only Plan (MOP) for five quarters. Results on Melresse were below GCTLs. Elevated arsenic was limited to one monitoring well (MW-31) located on the boundary with Grapeland Park, SCE proposed that source of the arsenic was the park and that the ongoing MOP for Grapeland Park should incorporate MW-31 into its sampling protocol. DERM's June 13, 2017 correspondence acknowledged that the groundwater monitoring plan had been discontinued at Melreese, as this was going to be combined with Grapeland for a join restrictive covenant. Monitoring continued at Grapeland.

Grapeland Heights Site Development (Southeastern-Adjoining Property)
1550 Northwest 37th Avenue
DERM Facility ID: AW-284/HWR-594

- DERM has a combined regulatory file for the Grapeland Heights Site Development and the northwestern adjoining Melreese Golf Course.

- Elevated arsenic was detected at the northeastern boundary of Grapeland Park. The area was delineated and excavated. Groundwater monitoring has continued in that area, and elevated arsenic persists in MW-31. DERM issued a letter on March 20, 2019 requesting an additional quarterly groundwater monitoring event. In addition, DERM requested corrective action with regard to the existing engineering control installations.

- The presence of incineration debris was initially reported to DERM in March 2005 during an evaluation of the southeastern adjoining Grapeland Park prior to its redevelopment to the current park configuration. As a result of the site assessment activities of the Grapeland Park site, Petro Hydro implemented a soil source removal, which resulted in the excavation and offsite disposal of 86,676 tons of soil contaminated with arsenic mixed with municipal incinerator ash.

Melreese Maintenance Facility
FDEP Facility ID: 8622193; DERM Facility ID: UT-3576
FDEP Facility ID: 9602446

- FDEP tank registration records indicated that one 1,000-gallon fuel AST was removed from the *Property* in March 1995. No further regulatory or tank closure information was available for review.

- A Discharge Notification Form (DNF) was submitted following the discovery of petroleum impacted groundwater during the excavation of one 1,000 gasoline UST on April 26, 1995 at the maintenance facility. Tank registration records indicated that the UST was installed in December 1983. In addition, two 500-gallon ASTs, containing gasoline and diesel fuel, were identified as "in service" in 1995. A Tank Closure Assessment Report (TCAR) was submitted to DERM on August 7, 1995. According to the TCAR, once the excavation was complete, no petroleum impacted soil was identified; however elevated levels of benzene and methyl tert-butyl ether (MTBE) were detected above the applicable guidelines in the groundwater referenced in Chapter 62-770, FAC. According to the DERM inspection report, one sample of groundwater from the bottom of the exaction was sampled for analysis. None of the tested constituents, including MTBE and benzene, were identified above the applicable guidelines referenced in Chapter 62-770, FAC. No records of further testing was identified; however on October 12, 1995, DERM issued a letter approving the TCAR and released the facility from further site investigation. On September 30, 2008 DERM issued a letter to FDEP requesting that the 1995 discharge be deleted based upon the TCAR approval. FDEP responded on October 24, 2008 and issued a No Cleanup Required status to the facility.

Delucca Enterprises
DERM Facility ID: GDO-3835, IW5-15642

- Delucca Enterprises aka International Links of Miami operated the Melreese Golf Course maintenance facility under the IW5 permit #15642. The maintenance facility operated as an equipment washing and maintenance area as well as a storage facility for pesticides and fertilizers. DERM inspection records, dating back to 1995, indicated that the facility operated utilizing a septic tank system from approximately 1961 until present day. Routine sampling of the septic tank by DERM inspectors revealed evidence of industrial waste discharges.

- URS performed an Environmental Site Assessment (ESA) in February 2004 following repeated inspections by DERM where evidence of hazardous waste discharges to the onsite septic tank system was identified. URS installed two soil borings and one monitoring well in the vicinity of the septic tank drainfield. Based upon the analytical data, URS determined that none of the tested constituents were above the applicable soil and/or groundwater guidelines.

- Subsequent DERM compliance inspections in 2006, 2011, and 2016 have resulted in enforcement action and the subsequent required pump out of the septic tank. The most recent inspection, conducted in July 2018, identified no compliance violations.

SECTION 4.0
SOIL ASSESSMENT METHODOLOGY & FINDINGS

EE&G documented the soil assessment activities that were conducted between March 11 and April 10, 2019. Due to schedule restrictions, access was granted only Monday – Wednesday each week. The soil sampling was done concurrently with NV5's geotechnical evaluation. EE&G provided the environmental oversight of the test excavations being conducted by NV5, and supplemented those findings with additional environmental soil borings. A site map showing the soil sampling locations is provided as **Figure 4**. Sampling was conducted in accordance with Florida Department of Environmental Protection's (FDEP's) Standard Operating Procedures (SOPs) as specified in Chapter 62-160 of the Florida Administrative Code (FAC). Selected soil samples were collected in laboratory supplied, pre-cleaned sample bottles, placed on ice and transported to National Environmental Laboratory Accreditation Conference (NELAC)-certified laboratories for analyses.

Test Excavations (TEs)

A total of 33 TEs were excavated using a mini-excavator, labeled TE-1 through TE-33. The TEs were approximately 2.5-feet wide by 6-feet long, and were excavated to depths of approximately 6 to 8 feet below land surface (BLS). The soils were inspected for evidence of incineration-related debris or other environmental concerns.

EE&G selected total of 14 soil samples collected from sidewalls of the TEs for confirmation laboratory analyses. The samples were collection from various locations representing the site, and based on field observations. Seven soil samples were collected the surficial interval (0 to 1-ft, 1 to 2-ft, or 0 to 2-ft BLS). A majority of these surficial soil samples selected for analysis contained some evidence of incineration debris. However, three of the samples did not have evidence of debris and were selected to evaluate the golf course cap above the debris. Seven additional soil samples were collected from the underlying 2 to 4-ft BLS interval, a majority of which contained varying amounts of incineration debris.

All 14 TE soil samples were analyzed for:

- Total Arsenic, Barium and Lead by EPA Method 6010.

Additionally, nine of the samples also were analyzed for the following list of expanded parameters:

- Volatile Organic Compounds (VOCs) by EPA Method 8260 (only TE-1)
- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270
- Total Petroleum Hydrocarbons (TPHs) by Method FL-PRO
- Total Cadmium, Chromium, Mercury, Selenium and Silver by EPA Methods 6010/7470
- Dioxin/Furans by EPA Method 8290

Three additional TE soil samples collected during the final day of test pits also were analyzed for Dioxin/Furans by EPA Method 8290.

Soil Borings (SBs)

EE&G oversaw the advancement of 38 soil borings using a truck-mounted direct-push technology (DPT) drilling rig, labeled SB-1 through SB-37 and SB-A. Soil boring locations were spread across the property to provide additional coverage and fill in gaps between the TE locations, and to focus on the maintenance area. Soil samples were collected from the 0 to 0.5-feet, 0.5 to 2-feet, and 2 to 4-feet BLS interval of 37 borings. Additionally, 21 deeper soil samples were collected from borings advanced on hills and areas with deeper water tables, representing the 4 to 6-feet and a few 6 to 8-feet BLS intervals.

- A total of 132 soil samples were analyzed for:
  - Total Arsenic, Barium and Lead by EPA Method 6010.

The soil sample collected from SB-9 (2 to 4-feet BLS), located in the maintenance area septic tank drainfield, was also analyzed for the following list of expanded parameters:

- Volatile Organic Compounds (VOCs) by EPA Method 8260
- Organochlorine Pesticides by EPA Method 8081
- Organophosphorus Pesticides by EPA Method 8141
- Chlorinated Herbicides by EPA Method 8151
- Total Cadmium, Chromium, Mercury, Selenium and Silver by EPA Methods 6010/7470 Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270
- Total Petroleum Hydrocarbons (TPHs) by Method FL-PRO
- Dioxin/Furans by EPA Method 8290

The soil sample collected from SB-12 (6 to 7-feet BLS), located in the northern portion of the property adjacent to TE-2 (which contained heavy deep debris), also was analyzed for the following additional parameters:

- Total Cadmium, Chromium, Mercury, Selenium and Silver by EPA Methods 6010/7470
- PAHs by EPA Method 8270
- TPHs by Method FL-PRO
- Dioxin/Furans by EPA Method 8290

Three additional soil samples from SB-1, SB-3 and SB-4 also were analyzed for:

- PAHs by EPA Method 8270
- Dioxin/Furans by EPA Method 8290

Soil Findings

A Site Map illustrating the inferred extent of incineration debris is provided as **Figure 5**. A summary of field observation is provided in **Table 1**. A majority of the sampling locations contain visible evidence of incineration debris and/or construction & demolition debris. While there are a few small areas where a soil boring or test excavation did not exhibit debris, they were located in areas that clearly were disturbed in the 1951 and/or 1961 aerial photographs. Therefore, the entire site is considered to be impacted with buried incineration ash debris, and some areas of historic deposition have since been reworked. The ash/debris thicknesses varied from as thin as 1-foot to as thick as 10-feet, with the average thickness of approximately 4-feet. The original deposition of debris was disrupted in the mid-1990s when the golf course was redesigned and the topography altered. Debris extended beneath the water table in several TEs. Debris was encountered in several surficial soils (0 to 2-feet BLS), and debris was found as shallow as 0.5-feet BLS in several locations. The debris included fragments of tile, metal, and glass, mixed with fine-grain sands, which often exhibited a rusty color. Intermittent wood fragments were encountered, along with concrete and other non-native materials, but no evidence of municipal garbage. Native limestone was encountered at a depth of approximately 5 to 8 feet BLS, often directly beneath the debris and sand layer.

Soils from 13 soil borings were collected in 2-foot intervals and screened in the field using an Organic Vapor Analyzer (OVA), equipped with a Flame Ionization Detector (FID), to assess for petroleum-affected soils. The OVA/FID was utilized with and without a charcoal filter to assess for the presence of naturally occurring methane interferences. OVA/FID results generated from field-testing of soils were compared with the FDEP's "*Guidelines for Assessment and Source Removal of Petroleum Contaminated Soils"*, dated May 1998, which identified an action level of 10 parts per million (ppm) for petroleum-affected soils collected above the water table. The OVA/FID results are summarized in **Table 2** and depicted in **Figure 6**.

- OVA results were detected above the 10-ppm action level in half of the borings. However, no evidence of petroleum odors was observed, except SB-A in the former UST area. It is likely that methane influenced the field readings. Two borings in particular exhibited higher OVA readings, which extinguished the meter, including SB-5 (central-northeastern portion) and SB-11 (northwestern corner).

Soil analytical results were compared with the FDEP *Contaminant Cleanup Target Levels*, per Chapter 62-777, FAC, which regulates Soil Cleanup Target Levels (SCTLs) for *residential-use direct exposure (SCTL-R)*, *commercial-use direct exposure (SCTL-C)* and *leachability (SCTL-L)* concerns. A copy of the soil analytical results, chain of custody form and logs are provided in **Appendix C**. A summary of the Soil Analytical Results and Benzo(a)pyrene (BaP) Conversion Tables are provided in **Tables 3 thru 10**. A summary of the soil results maps are provided as **Figure 7** (entire site) and **Figure 8** (expanded maintenance area map).

The following is a summary of the laboratory results for soil assessment (combined both SB and TE samples):

Arsenic: 146 soil samples were analyzed for total arsenic. The concentrations ranged from below laboratory method detection limits (MDLs) to a high of 275 milligrams per kilogram (mg/Kg). 90% (131) of the soil samples contained arsenic at concentrations in excess of the 2.1 mg/Kg SCTL-R, and 46% (67)of the soil samples contained concentrations in excess of 12 mg/Kg SCTL-C.

- Overall soils in the shallow interval (0 to 0.5-feet BLS) contained higher concentrations of arsenic. 62% of the soils in this shallow interval exceeded the 12 mg/Kg SCTL-C, as compared with the underlying layers, which drop to 36% in 0.5 to 2-feet BLS interval and 35% in the 2 to 4-feet BLS interval. EE&G ran the ProUCL 95% UCL calculator on the SB data and the results are below (see backup in **Appendix C**):

  - 0 to 0.5-feet BLS – 95% UCL = 26.45 mg/Kg
    - ✓ Note: When the one highest outlier value (156 mg/Kg) was removed from the dataset, the revised 95% UCL = 18.95 mg/Kg.

    - ✓ The revised UCL was relatively similar to the 95% UCL EE&G calculated using the 50 soil samples from the initial 2005 SSAR, which was 15.11 mg/Kg.

  - 0.5 to 2-feet BLS – 95% UCL = 15.5 mg/Kg (Note highest value – 275 mg/Kg – was removed, as program indicated the dataset was not compliant with the options)

  - 2 to 4-feet BLS – 95% UCL = 27.28 mg/Kg

  - 4 to 6-feet BLS – 95% UCL = 33.64 mg/Kg

- The three highest arsenic samples (152, 156, and 275 mg/Kg) were selected and reanalyzed using the Toxicity Characteristic Leaching Procedure (TCLP), and results were all below the 5.0 milligram per liter (mg/L) hazardous waste criteria.

Barium: 117 soil samples were analyzed for total barium. The concentrations ranged from below laboratory MDLs to a high of 4,000 mg/Kg. 21% (25) of the soil samples contained barium at concentrations in excess of the 120 mg/Kg SCTL-R. Results were below SCTL-C.

Lead: 146 soil samples were analyzed for total lead. The concentrations ranged from below laboratory MDLs to a high of 7,650 mg/Kg. 20% (29) of the soil samples contained lead at concentrations in excess of the 400 mg/Kg SCTL-R, and 10% (15) of the soil samples contained concentrations in excess of 1,400 mg/Kg SCTL-C.

- 12 soil samples with varying total lead concentrations ranging from 150 mg/Kg to 7,240 mg/Kg, were reanalyzed using the TCLP method. The results were all below the 5.0 mg/L hazardous waste criteria.

Dioxin/Furans: 17 soil samples were analyzed for dioxin/furans. The TEF concentrations ranged from 0.46 nanograms per kilogram (ng/Kg) to a high of 177.47 ng/Kg. Eight of the soil samples (47%) contained dioxin/furan TEF concentrations in excess of the 7.0 ng/Kg SCTL-R. Two soil samples also exceeded the 30 ng/Kg SCTL-C. The following three samples were the three highest detected:

- The soil sample SB-1 (3.5 to 4.5-feet BLS), located in the southeastern portion, contained 75.87 ng/Kg.

- The soil samples collected from TE-33, located in the central-eastern portion of the golf course north of the maintenance facility, contained 24.58 (0 to 2-feet BLS) and 177.47 ng/Kg (2 to 4-feet BLS).

Other COCs: The other COCs tested were below SCTLs, with the exception of SB-9 (2 to 4-feet BLS), which contained 0.0050(I) mg/Kg of dieldrin, which slightly exceeded the 0.002 mg/Kg SCTL-L. The laboratory data, the reported results were qualified (I) as they were below the 0.022 mg/Kg Practical Quantitation Limit (PQL). Therefore, the laboratory was unable to report the actual dieldrin value with certainty. The results were below the 0.06 mg/Kg SCTL-R.

SECTION 5.0
GROUNDWATER ASSESSMENT METHODOLOGY & FINDINGS

EE&G supervised the installation of monitoring wells, and collected groundwater samples from pre-existing and newly-installed monitoring wells to assess the groundwater quality. A site map illustrating the monitoring well location is provided as **Figure 9**. Sampling was conducted in accordance with FDEP's SOPs as specified in Chapter 62-160, FAC. Groundwater samples were collected in laboratory supplied, pre-cleaned sample bottles, placed on ice and transported to NELAC-certified laboratories for analyses.

EE&G supervised the installation of five monitoring wells (designated as MW-1 through MW-5) on March 13, 2016. The monitoring wells MW-1, MW-2 and MW-3 were installed at the soil boring locations, SB-1, SB-3 and SB-6, respectively. The monitoring wells MW-4 and MW-5 were located on the southeastern portion of the *Property*. The monitoring well consisted of a 1.5-inch diameter, pre-pack screened interval (ranging from approximately 2.9 to 12.9-feet BLS to 3.2 to 13.2-feet BLS; screened across the water table interface, which was observed to range from approximately 4.6 to 6.7-feet BLS), and a sufficient solid PVC riser to reach the surface. The riser was sealed with a water-tight cap. The well construction and development logs and the groundwater sampling logs are provided in **Appendix D**.

- EE&G initially collected groundwater samples from six existing monitoring wells on March 4, 2019, including MW-31, MW-39, MW-42, MW-44, SCS-MW-1, and SCS-MW-2. The groundwater samples were analyzed for the following parameters:
  - VOCs by EPA Method 8260
  - PAHs by EPA Method 8270
  - TPHs by Method FL-PRO
  - Organochlorine Pesticides by EPA Method 8081
  - Organophosphorus Pesticides by EPA Method 8141
  - Chlorinated Herbicides by EPA Method 8151
  - Total Aluminum, Arsenic, Barium Cadmium, Chromium, Iron, Lead, Mercury, Selenium and Silver by EPA Methods 6010/7470
  - Dioxin/Furans by EPA Method 8290
  - Ammonia (as N) by EPA Method 350.1
  - Nitrates/Nitrites by EPA Method 300.0

Based on these results, EE&G modified the remaining groundwater sampling parameters to focus on the primary COCs.

- EE&G collected groundwater samples from a pre-existing monitoring well (labeled MW-9 from this report) on March 26, 2019, located in the maintenance area adjacent to the septic tank. These groundwater samples were analyzed for the following parameters:
  - VOCs by EPA Method 8260
  - PAHs by EPA Method 8270
  - TPHs by Method FL-PRO
  - Organochlorine Pesticides by EPA Method 8081
  - Organophosphorus Pesticides by EPA Method 8141
  - Chlorinated Herbicides by EPA Method 8151
  - Total Arsenic, Barium, Iron, Lead, by EPA Method 6010
  - Ammonia (as N) by EPA Method 350.1

- EE&G found one additional pre-existing monitoring well, MW-38, which was sampled on March 26, 2019, and analyzed for the following parameters:
  - Total Arsenic, Barium, Iron, Lead, by EPA Method 6010
  - Organochlorine Pesticides by EPA Method 8081

- A total of 11 new monitoring wells were installed, which were labeled MW-1 through 8, and MW-10 through 12. The wells were constructed of 1.5-inch diameter PVC casings, with 10-feet of pre-packed slotted well screen and sufficient solid riser to reach the surface. The wells were topped with water-tight caps within a protective manhole. The shallow monitoring wells were installed to depths of approximately 12 to 15 feet BLS, designed to intersect the groundwater table interface. EE&G collected groundwater samples from the 11 newly-installed monitoring wells on March 26 & 27 and April 8, 2019. Groundwater samples were analyzed for the following parameters:
  - Total Arsenic Iron, Lead, by EPA Method 6010 (all 11 samples)
  - Barium by EPA Method 6010 (only MW-1 through MW-8)
  - Organochlorine Pesticides by EPA Method 8081 (only MW-1 through MW-8)
  - Ammonia (as N) by EPA Method 350.1 (only MW-3, MW-4 and MW-5)
  - Dioxins/Furans by EPA Method 8290 (only MW-3 and MW-4)

- EE&G collected one direct-push groundwater grab sample, GW-1, from the former UST area north of the maintenance building, which was analyzed for the following parameters:
  - VOCs by EPA Method 8260
  - PAHs by EPA Method 8270
  - TPHs by Method FL-PRO

- Based on the sampling results, EE&G resampled the following wells for specific COCs:
  - Dieldrin – MW-31, MW-44 and SCS-MW-1 on March 27, 2019
  - Iron – MW-31, MW-44, SCS-MW-1 on March 27, 2019
  - Iron – MW-2, MW-5, MW-9, and MW-38 on April 8, 2019
  - Arsenic –MW-2 on April 8, 2019

Groundwater Findings

Groundwater analytical results were compared with the FDEP *Contaminant Cleanup Target Levels*, per Chapter 62-777, FAC, which regulates the Groundwater Cleanup Target Levels (GCTLs, a.k.a. No Further Action criteria) and Natural Attenuation Default Source Concentrations (NADSCs; a.k.a., Monitoring Only criteria). Copies of the groundwater analytical results, sampling logs and chain of custody forms are provided in **Appendix D**. A summary of the groundwater laboratory results are provided in **Tables 11** and **12**. Well details and groundwater elevation measurements are provided in **Table 13**. A summary of the groundwater results map is provided in **Figures 10** through **16**.

The following is a summary of the groundwater sampling results:

Former UST Area (GW-1): A hydrocarbon odor was observed during the sampling of GW-1, located in the former UST area on the north side of the maintenance building. However, the VOCs, PAHs, and TPHs were below GCTLs.

Arsenic: Two of the 19 wells sampled contained total arsenic above the 10 microgram per liter (ug/L) GCTL:

- MW-2 (southwestern corner) contained 13.2 ug/L of total arsenic. This well was resampled on April 8, 2019 and the result was 20.9 ug/L.
- MW-31 (east-southeastern boundary sample – attributed to Grapeland Park) contained 92 ug/L of total arsenic. This well was resampled on April 8, 2019 and the result was 85.2 ug/L. This finding confirmed previous monitoring results on file with DERM.
- None of the arsenic concentrations exceeded the 100 ug/L NADSC.

Ammonia: Three of the 10 wells sampled contained ammonia above the 2.8 mg/L GCTL:

- MW-5 (central-northeastern portion) contained 3.0 mg/L.
- MW-9 (maintenance area) contained 9.3 mg/L.
- MW-44 (northeastern portion) contained 3.5 mg/L.
- None of the ammonia concentrations exceeded the 28 mg/L NADSC.

Iron: 12 of the 19 wells sampled contained total iron above the 706 (ug/L Miami-Dade County Natural Background Level:

- Four wells (SCS-MW-1, MW-5, MW-31, and MW-35) contained higher total iron concentrations ranging from 2,000 ug/L to 2,950 ug/L. These were isolated areas of exceedances, while a majority of the site concentrations were less than 1,000 ug/L.
- None of the iron concentrations were confirmed to exceed the 3,000 ug/L NADSC.

Dieldrin: Two of the 16 wells sampled contained low concentrations of dieldrin just above the 0.002 ug/L GCTL. The laboratory data, the reported results were qualified (I) as they were below the Practical Quantitation Limit (PQL). Therefore, the laboratory was unable to report the actual dieldrin value with certainty. These wells were resampled and dieldrin was below the GCTL.

Other COCs: The other COCs tested were below laboratory reporting limits and below GCTLs, with the exception of three PAH constituents, which were not detected, but the laboratory MDLs could not meet the GCTLs. Considering no evidence of other petroleum compounds were detected, the MDLs were considered sufficient to demonstrate that a release has not occurred with respect to these compounds.

SECTION 6.0
SOIL GAS VAPOR SCREENING METHODOLOGY & FINDINGS

EE&G documented the installation of eight soil-vapor wells, which were designated VW-1 through VW-8. Based on preliminary results, EE&G installed three additional confirmation vapor wells, VW-9 (adjacent to VW-2), VW-10 (adjacent to VW-7), and VW-11 (adjacent to VW-8). A site layout map illustrating the soil vapor well locations is provided as **Figure 17**. The 1-inch diameter vapor wells were installed to depths ranging from approximately 3-feet to 7-feet BLS (adjusted to terminate above the water table), and included approximately 2-feet to 5-feet of slotted screen and sufficient solid riser to reach the surface. The wells were fitted with gas sampling ports within a protective manhole.

On April 2 and 9, 2019, EE&G screened the soil vapor in the field using an OVA/FID and a 4-gas meter. The vapor results are summarized in **Tables 14** and **15.** The following is a summary of the soil vapor assessment findings:

- VW-2 was located in the southwestern corner of the property, and exhibited elevated readings above the 5% LEL for methane. The adjoining confirmation well VW-9 did not exhibit elevated readings above the LEL.

- VW-7 was located in the northwestern corner of the property and exhibited elevated readings above the 5% Lower Explosivity Limit (LEL) for methane. The adjoining confirmation well VW-10 also exhibited elevated readings above the LEL.

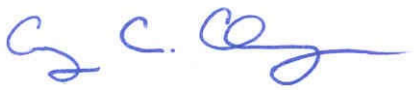
- The other wells did not exhibit elevated LEL readings.

SECTION 7.0
RECOMMENDED ITE REHABILITATION STRATEGY

The Miami Freedom Park Project will include a soccer stadium, commercial/retail development, and parking across the western/northwestern portion. The Project will also include the construction of a public park across the east-southeastern portion of the property. Miami Freedom Park, LLC and the City of Miami should meet with DERM to develop a site rehabilitation plan. The objective of the site rehabilitation plan would be to implement construction of the proposed Miami Freedom Park Project in an environmentally-safe manner and utilize the proposed development to create an Engineering Control cap across the entire site to obtain a No Further Action with Conditions (NFAC) closure.

SECTION 8.0
PROFESSIONAL CERTIFICATION

I, Craig C. Clevenger, P.G. #1666, certify that I currently hold an active license in the state of Florida and am competent through education and experience to provide the geological consulting services documented in the aforementioned Site Rehabilitation Plan (SRP). I further certify that, in my professional judgment, this report meets the general requirements of Chapter 24-44, Code of Miami-Dade County, and Chapter 492, F.S., and was prepared by me with field sampling completed under my direction. Moreover, I certify that EE&G holds an active certificate of authorization #GB483 to provide geological services in the state of Florida.



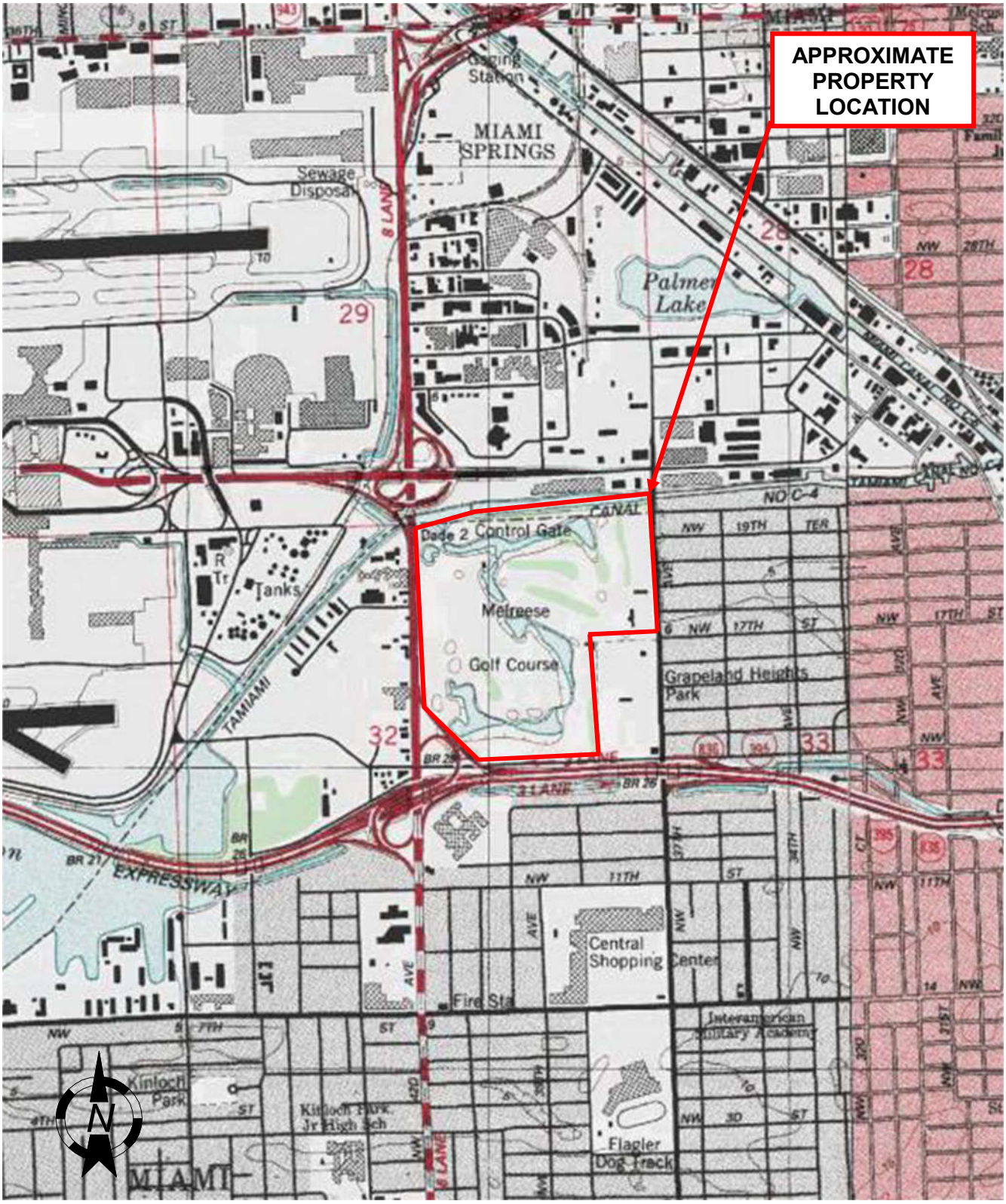
Craig C. Clevenger, P.G. #1666

August 14, 2019
Date

FIGURES

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004



Proposed Miami Freedom Park
(International Links Melreese Country Club)
1802 NW 37th Avenue, Miami, FL 33125
Project #: 2018-3057.JPH1

SITE LAYOUT MAP
(USGS TOPOGRAPHIC MAP)

FIGURE 1

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Proposed Miami Freedom Park
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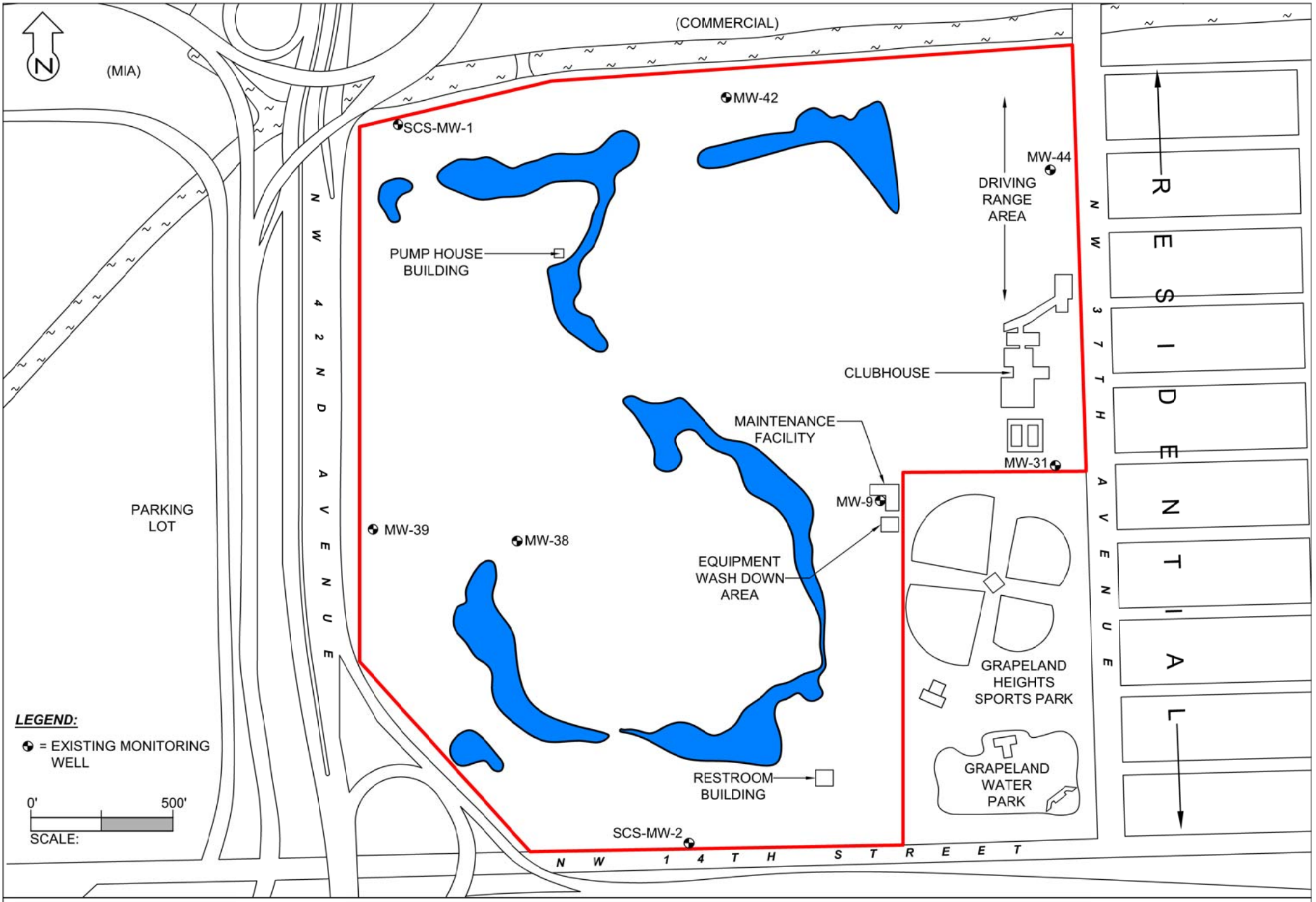
Project #: 2018-3057

2019 AERIAL PHOTOGRAPH



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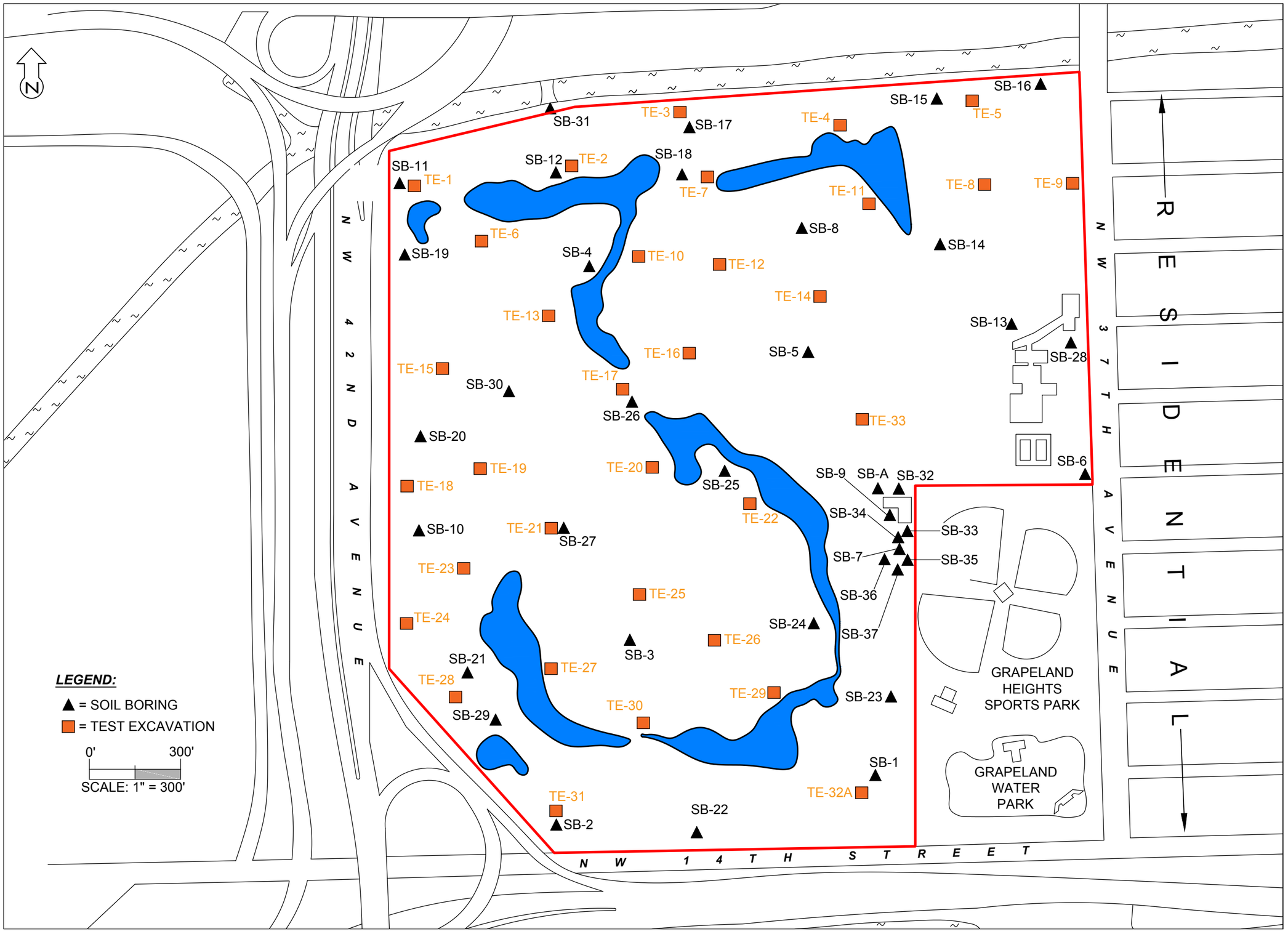
PROPOSED MIAMI FREEDOM PARK
(INTERNATIONAL LINKS MELREESE COUNTRY CLUB)
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

SITE LAYOUT MAP

Date:	06/17/2019
Project #	2018-3057
Drawn by:	JL
Cad File:	FIG 3
Dwg. Scale:	As Noted

FIGURE 3



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PROPOSED
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(INTERNATIONAL LINKS
MELREESE
COUNTRY CLUB)

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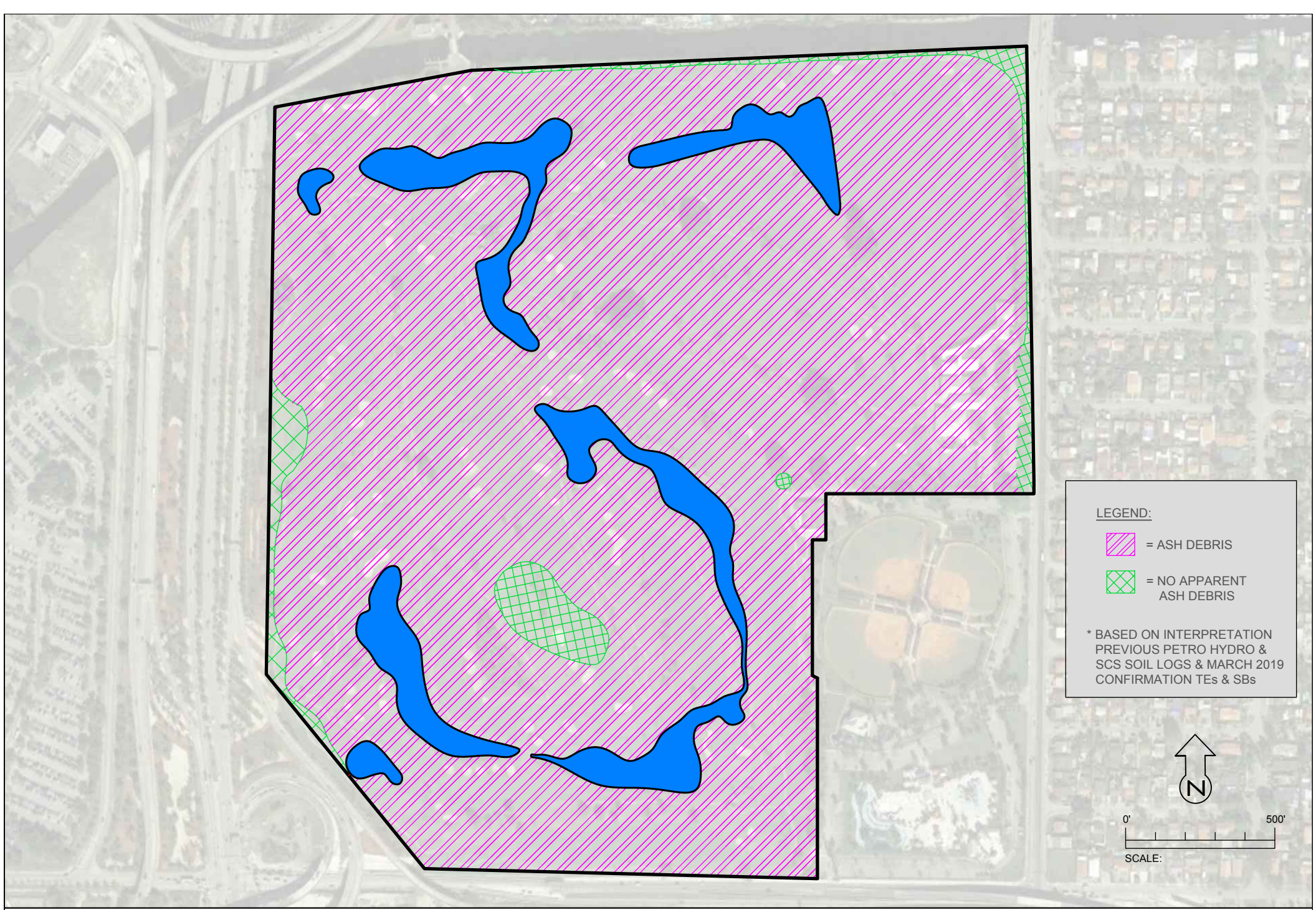
SHEET TITLE:

SOIL BORING &
TEST EXCAVATION
LOCATION
MAP

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-4
Revisions:	

Figure No.

4



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INFERRED EXTENT OF BURIED DEBRIS MAP

Date: 06/17/19
Project # 2018-3057
Drawn by: JL
Cad File: FIG5
Dwg. Scale: As Noted

FIGURE 5

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COUNTY, FLORIDA 33125

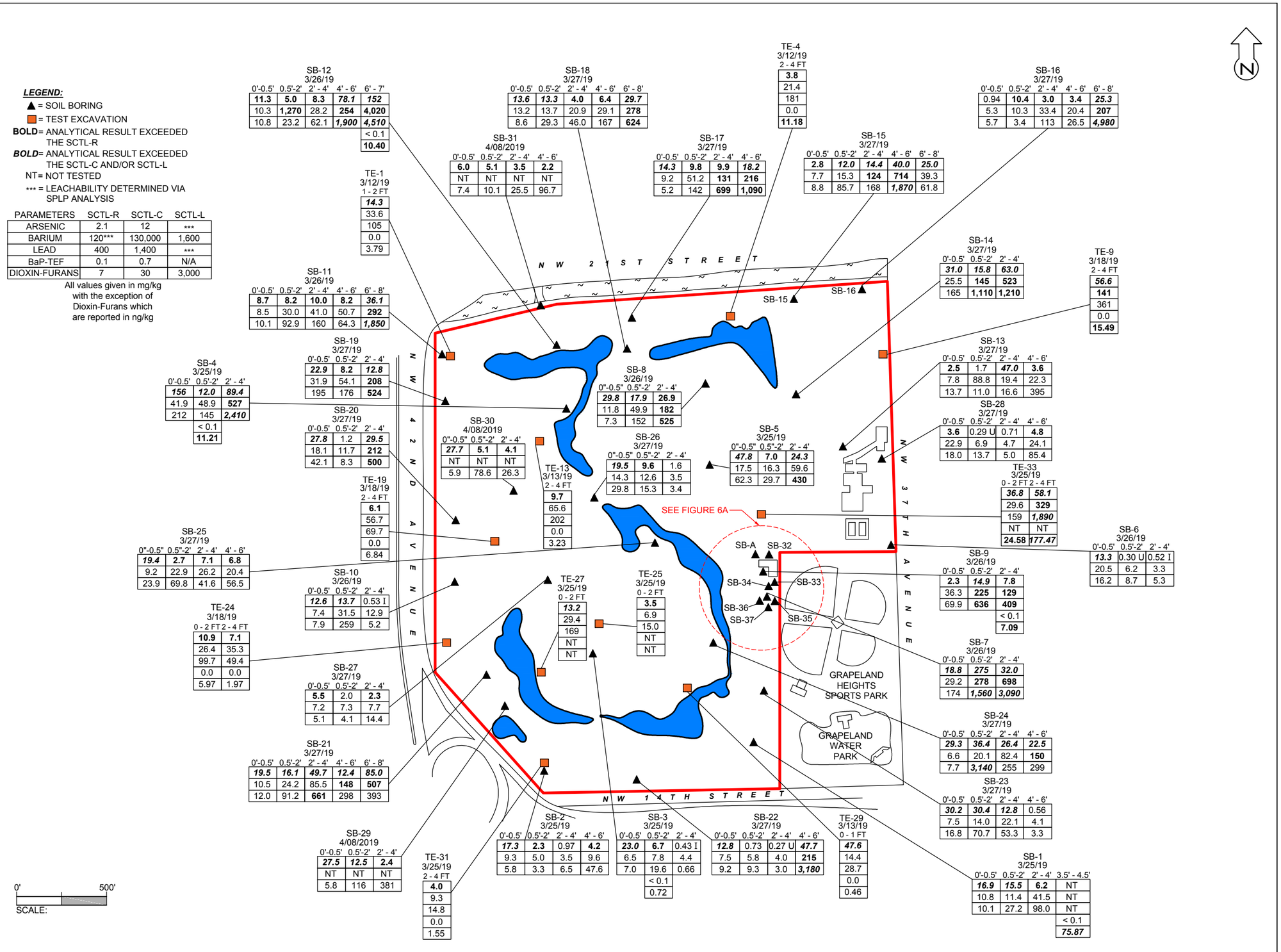
SHEET TITLE:

FIELD NET
OVA / FID
RESULTS
MAP

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-6
Revisions:	

Figure No.

6



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PROPOSED MIAMI FREEDOM PARK

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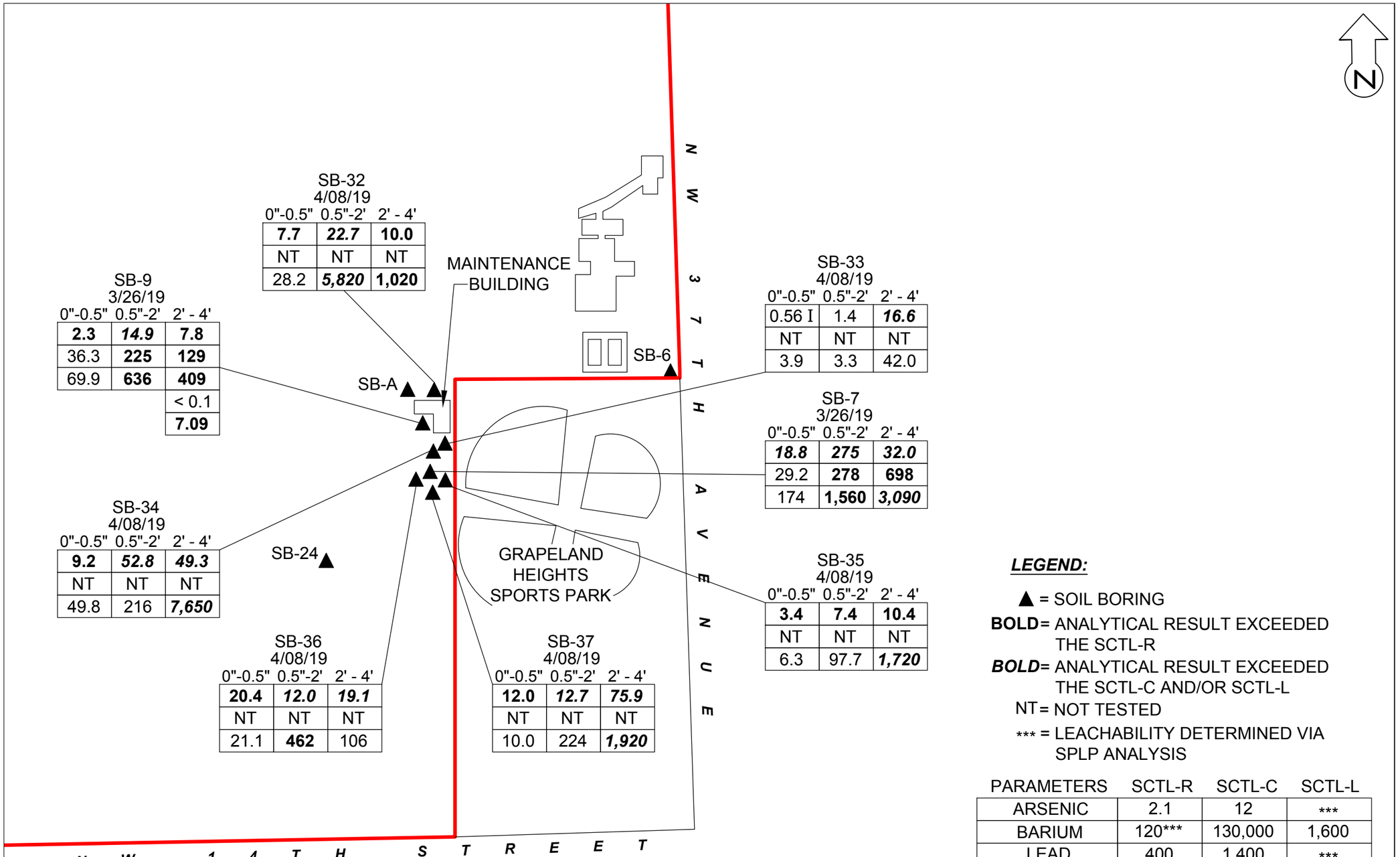
SHEET TITLE:

SOIL BORING & TEST EXCAVATION RESULTS MAP

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-7
Revisions:	

Figure No.

7



LEGEND:

▲ = SOIL BORING

BOLD = ANALYTICAL RESULT EXCEEDED THE SCTL-R

BOLD = ANALYTICAL RESULT EXCEEDED THE SCTL-C AND/OR SCTL-L

NT = NOT TESTED

*** = LEACHABILITY DETERMINED VIA SPLP ANALYSIS

PARAMETERS	SCTL-R	SCTL-C	SCTL-L
ARSENIC	2.1	12	***
BARIUM	120***	130,000	1,600
LEAD	400	1,400	***
BaP-TEF	0.1	0.7	N/A
DIOXIN-FURANS	7	30	3,000

All values given in mg/kg with the exception of Dioxin-Furans which are reported in ng/kg

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(INTERNATIONAL LINKS
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COUNTRY CLUB)

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COUNTY, FLORIDA 33125

SHEET TITLE:

SOIL BORING
RESULTS MAP
(MAINTENANCE AREA)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-8
Revisions:	

Figure No.

8

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PROPOSED MIAMI FREEDOM PARK
(INTERNATIONAL LINKS MELREESE COUNTRY CLUB)
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

MONITORING WELL LOCATION MAP

Date: 06/17/2019
Project # 2018-3057
Drawn by: JL
Cad File: FIG 9
Dwg. Scale: As Noted

FIGURE 9

LEGEND:

= MONITORING WELL
= DPT GROUNDWATER SAMPLE
NT = NOT TESTED
BOLD = ANALYTICAL RESULT EXCEEDED THE GCTL
BOLD = ANALYTICAL RESULT EXCEEDED THE NADSC
I = THE REPORTED VALUE IS BETWEEN THE LMDL & LPQL
U = THE REPORTED VALUE IS BETWEEN THE LMDL & LPQL

PARAMETERS	GCTL	NADSC
ARSENIC	10	100
BARIUM	2,000	20,000
LEAD	15	150
ALUMINUM	200	2,000
IRON	300	3,000

All values given in ug/L

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(INTERNATIONAL LINKS
MELREESE
COUNTRY CLUB)

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COUNTY, FLORIDA 33125

SHEET TITLE:

GROUNDWATER RESULTS MAP (METALS)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-10
Revisions:	

Figure No.

10

LEGEND:

= MONITORING WELL

= DPT GROUNDWATER SAMPLE

BOLD = VALUE EXCEEDS GCTL

GCTL = GROUNDWATER CLEANUP TARGET LEVEL

U = ANALYTICAL RESULT BELOW THE LABORATORY METHOD DETECTION LIMIT

I = THE REPORTED VALUE IS BETWEEN THE LABORATORY METHOD DETECTION LIMIT AND THE LABORATORY PRACTICAL QUANTITATION LIMIT

SCS-MW-1	3/04/19	
BARIUM	41.4	
LEAD	4.6 U	
ALUMINUM	30.7 U	
VOCs 8260 (µg/L)	U	
PAHs 8270 (µg/L)	U	
TPH FL-PRO (mg/L)	0.77 U	3/27/19
DIELDRIN	**0.0032 I**	0.0019 U
OTHER CHLORINATED PESTICIDES 8081 (µg/L)	U	U
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U	
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U	
DIOXINS - FURANS 8290 (pg/L)	2.89	

MW-42	3/04/19
BARIUM	20.8
LEAD	4.6 U
ALUMINUM	30.7 U
VOCs 8260 (µg/L)	U
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.77 U
CHLORINATED PESTICIDES 8081 (µg/L)	U
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U
DIOXINS - FURANS 8290 (pg/L)	3.71

MW-44	3/04/19
BARIUM	51.2
LEAD	4.6 U
ALUMINUM	30.7 U
ACETONE	5.4 I
OTHER VOCs 8260 (µg/L)	U
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.78 U
CHLORINATED PESTICIDES 8081 (µg/L)	U
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U
DIOXINS - FURANS 8290 (pg/L)	3.32

MW-4	3/26/19
BARIUM	61.7
LEAD	4.6 U
OTHER CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-8	3/27/19
BARIUM	88.3
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-5	3/26/19
BARIUM	187
LEAD	9.0 I
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-11	4/09/19
LEAD	4.6 U

MW-31	3/04/19	
BARIUM	16.6	
LEAD	4.6 U	
ALUMINUM	30.7 U	
VOCs 8260 (µg/L)	U	
PAHs 8270 (µg/L)	U	
TPH FL-PRO (mg/L)	0.77 U	3/27/19
DIELDRIN	**0.0023 I**	0.0019 U
OTHER CHLORINATED PESTICIDES 8081 (µg/L)	U	U
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U	
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U	
DIOXINS - FURANS 8290 (pg/L)	2.87	

MW-6	3/27/19
BARIUM	13.3
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-39	3/04/19
BARIUM	11.5
LEAD	4.6 U
ALUMINUM	30.7 U
VOCs 8260 (µg/L)	U
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.79 U
CHLORINATED PESTICIDES 8081 (µg/L)	U
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U
DIOXINS - FURANS 8290 (pg/L)	2.84

MW-7	3/27/19
BARIUM	174
LEAD	6.9 I
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-3	3/26/19
BARIUM	21.8
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

GW-1	3/26/19
VOCs 8260 (µg/L)	< GCTL
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.79 U

MW-38	3/26/19
BARIUM	75.3
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

MW-9	3/26/19
BARIUM	95.1
LEAD	4.6 U
VOCs 8260 (µg/L)	< GCTL
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.88 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U

MW-10	4/09/19
LEAD	4.6 U

MW-12	4/09/19
LEAD	4.6 U

MW-2	3/26/19
BARIUM	21.9
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

SCS-MW-2	3/04/19
BARIUM	23.0
LEAD	4.6 U
ALUMINUM	30.7 U
VOCs 8260 (µg/L)	U
PAHs 8270 (µg/L)	U
TPH FL-PRO (mg/L)	0.76 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL
ORGANOPHOSPHOROUS PESTICIDES 8141 (µg/L)	U
CHLOROPHENOXY HERBICIDES 8151 (µg/L)	U
DIOXINS - FURANS 8290 (pg/L)	3.65

MW-1	3/26/19
BARIUM	46.5
LEAD	4.6 U
CHLORINATED PESTICIDES 8081 (µg/L)	<GCTL

N W 21 S T S T R E E T

N W 42 N D A V E N U E

N W 37 T H A V E N U E

N W 14 T H S T R E E T

GRAPELAND HEIGHTS SPORTS PARK

GRAPELAND WATER PARK

N

0' 500'

SCALE:

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PROJECT:

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(INTERNATIONAL LINKS MELREESE COUNTRY CLUB)

1802 NW 37TH AVENUE
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SHEET TITLE:

GROUNDWATER RESULTS MAP
(OTHER PARAMETERS TESTED)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-11
Revisions:	
Figure No.	11

LEGEND:

◓ = MONITORING WELL

BOLD = ANALYTICAL RESULT EXCEEDED THE GCTL

BOLD = ANALYTICAL RESULT EXCEEDED THE NADSC

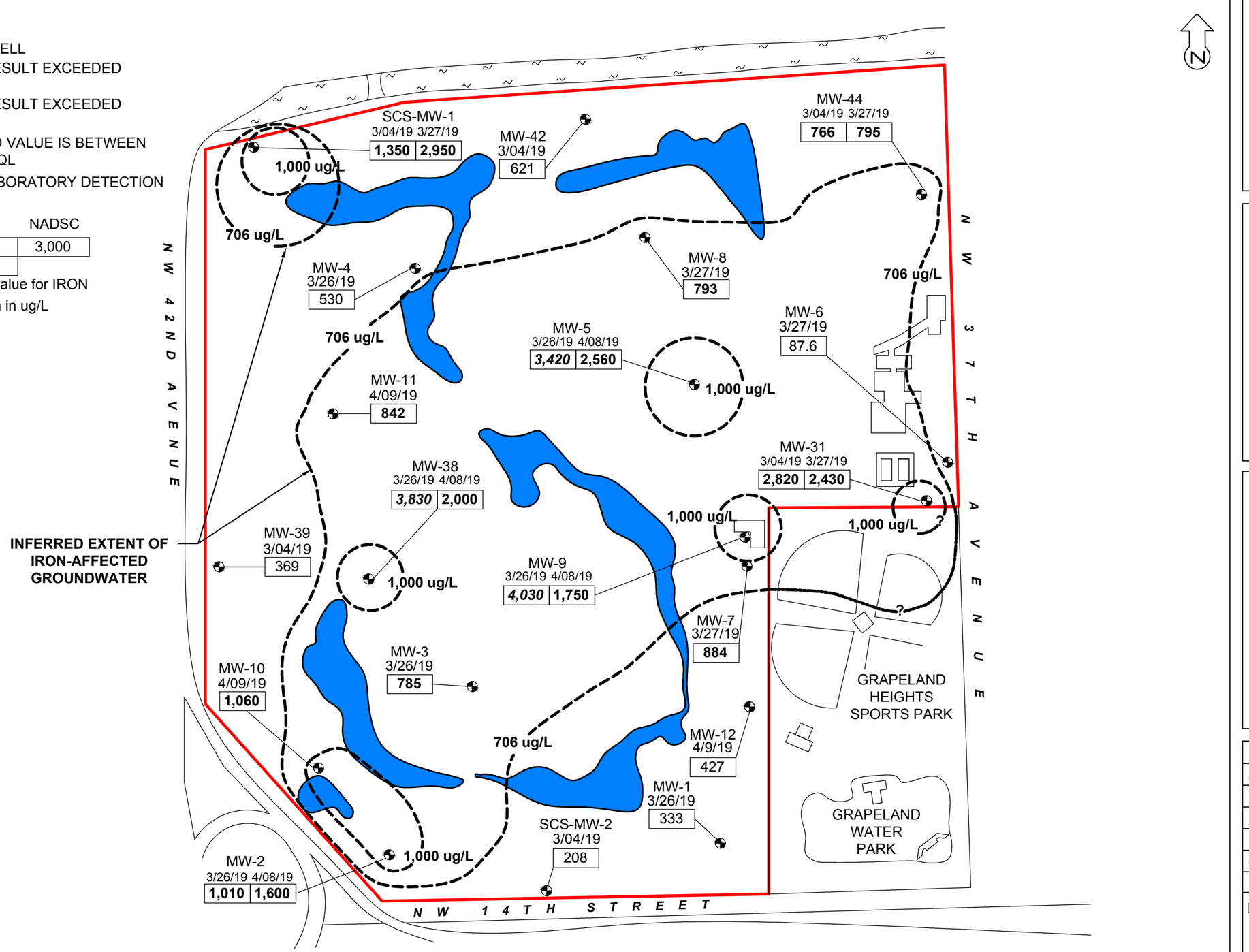
I = THE REPORTED VALUE IS BETWEEN THE LMDL & LPQL

U = BELOW THE LABORATORY DETECTION LIMITS

PARAMETERS	GCTL	NADSC
IRON	300	3,000
	706*	

*DERM background value for IRON

All values given in ug/L



0' 350'

SCALE:1" = 350'

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SHEET TITLE:

GROUNDWATER RESULTS MAP (IRON)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	SEEDRAWING
Cad File:	FIG-12
Revisions:	

Figure No.

12

LEGEND:

◓ = MONITORING WELL

BOLD = ANALYTICAL RESULT EXCEEDED THE GCTL

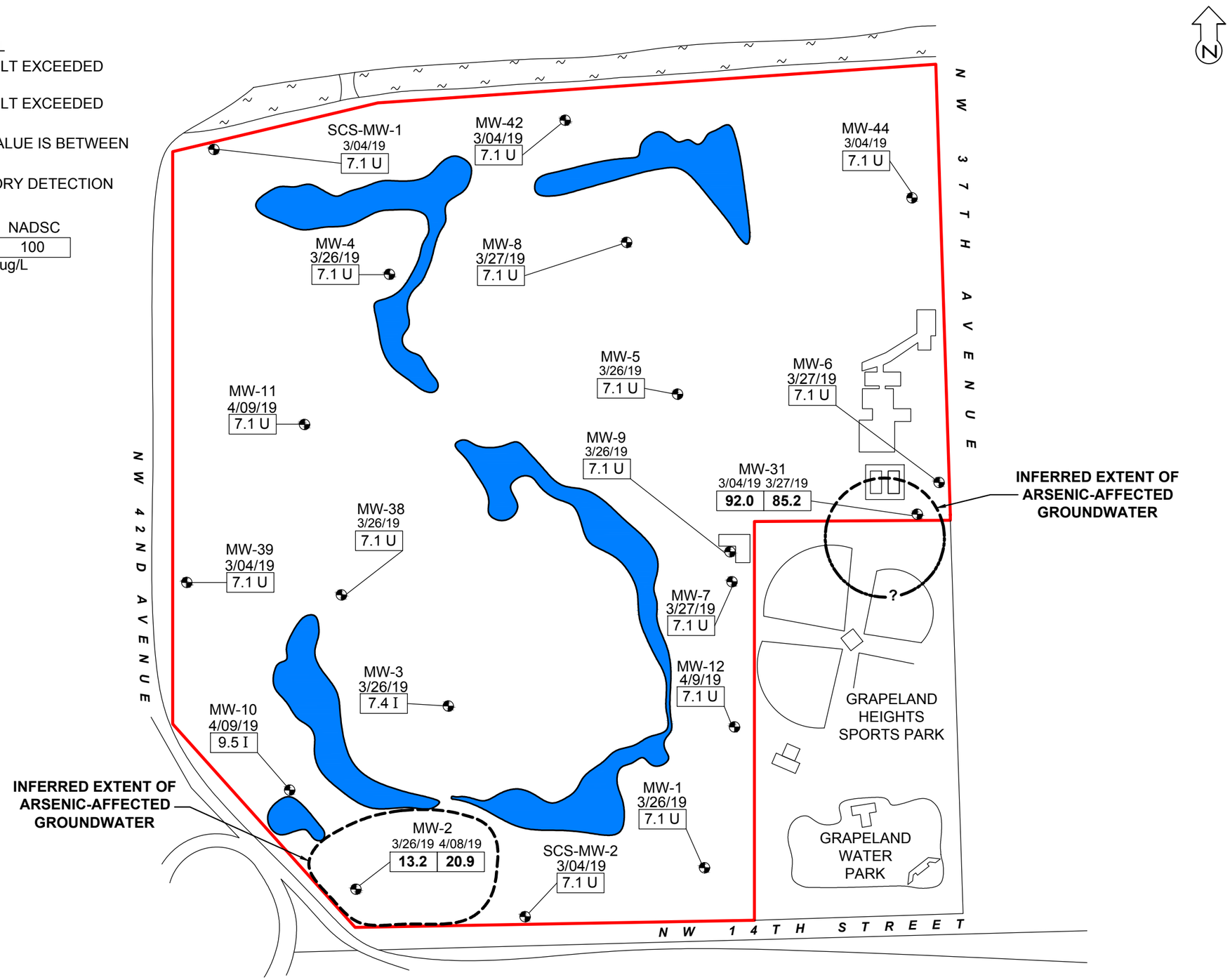
BOLD = ANALYTICAL RESULT EXCEEDED THE NADSC

I = THE REPORTED VALUE IS BETWEEN THE LMDL & LPQL

U = BELOW LABORATORY DETECTION LIMITS

PARAMETERS	GCTL	NADSC
ARSENIC	10	100

All values given in ug/L



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SHEET TITLE:

GROUNDWATER RESULTS MAP (ARSENIC)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-13
Revisions:	

Figure No.

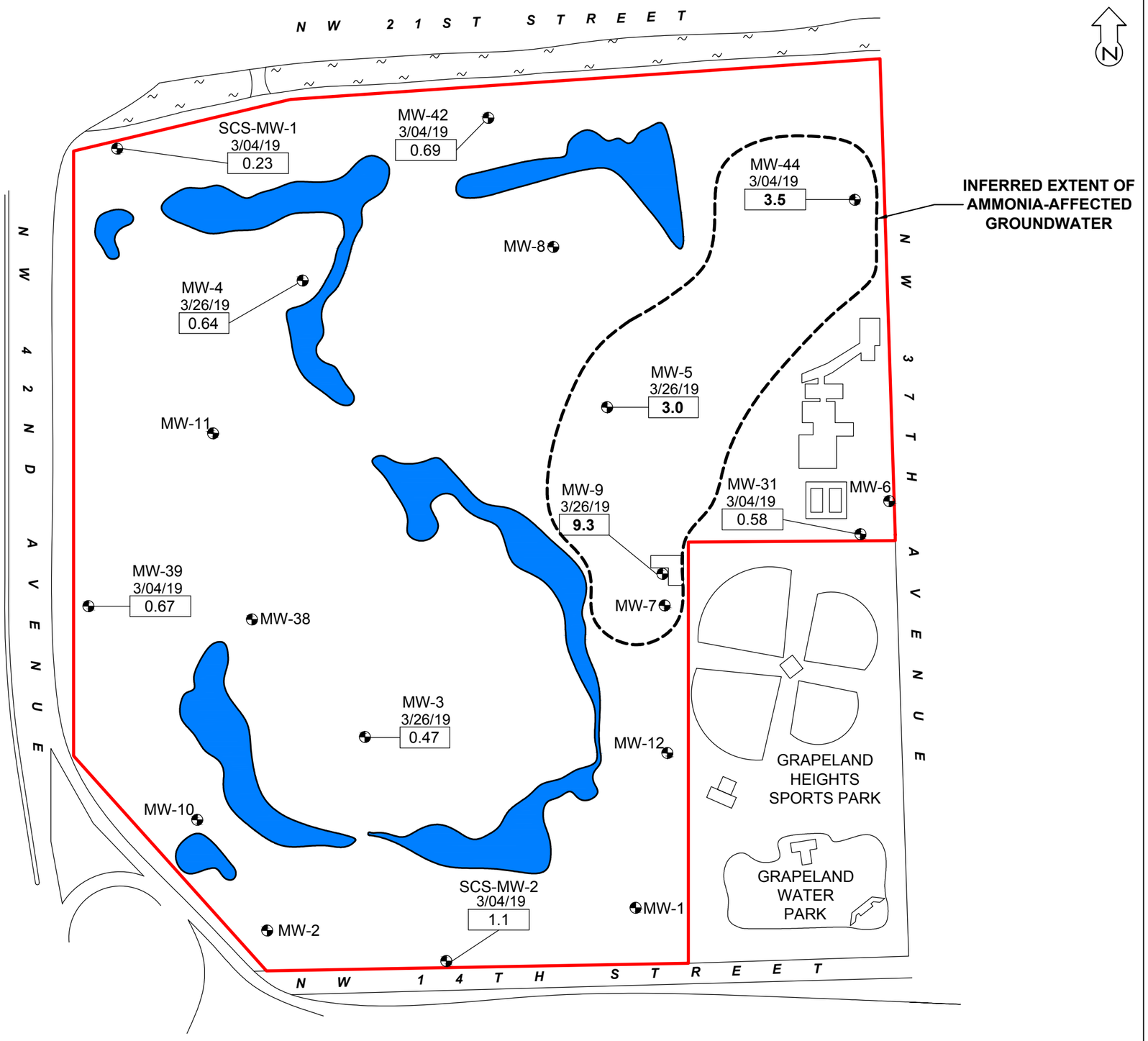
13

LEGEND:

= MONITORING WELL
BOLD = VALUE EXCEEDS GCTL
BOLD = VALUE EXCEEDS NADSC
NT = NOT TESTED
GCTL = GROUNDWATER CLEANUP TARGET LEVEL
NADSC = NATURAL ATTENUATION DEFAULT SOURCE CONCENTRATION
U = BELOW THE LABORATORY DETECTION LIMIT

PARAMETERS	GCTL	NADSC
AMMONIA (as N)	2.8	28

All values given in mg/L



0' 350'
SCALE:1" = 350'

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SHEET TITLE:

GROUNDWATER RESULTS MAP (AMMONIA)

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-14
Revisions:	

Figure No.

14

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COUNTY, FLORIDA 33125

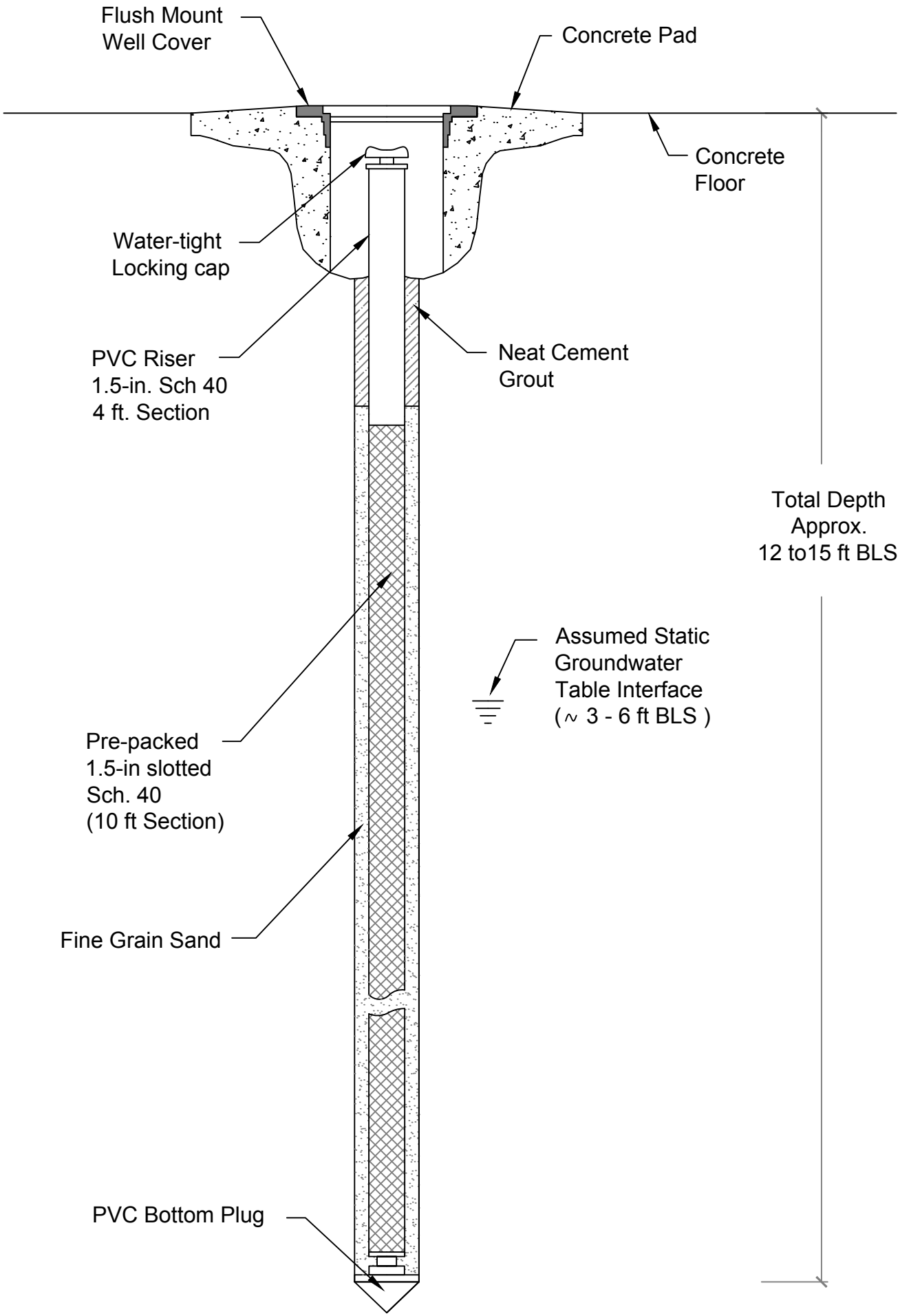
SHEET TITLE:

GROUNDWATER FLOW MAP

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG15
Revisions:	

Figure No.

15



EE&G
ENVIRONMENTAL SERVICES, LLC
5751 MIAMI LAKES DRIVE
MIAMI LAKES, FLORIDA 33014
(305) 374-8300
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PROPOSED MIAMI FREEDOM PARK
(INTERNATIONAL LINKS MELREESE COUNTRY CLUB)
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

MONITORING WELL
CONSTRUCTION
DIAGRAM

Date:	06/17/19
Project #	2018-3057
Drawn by:	JL
Cad File:	FIG16
Dwg. Scale:	As Noted

FIGURE
16

LEGEND:

Ⓥ = VAPOR WELL
LEL = LOWER EXPLOSIVE LIMIT(%)
CH_4 = METHANE(%)
O_2 = OXYGEN(%)
VOC = VOLATILE ORGANIC COMPOUND(ppm)

PROPERTY BOUNDARY

N

VW-7	LEL	CH_4	O_2	VOC
4/02/19	>60	4.1	0.9	0
4/09/19	>100	4.1	0.5	0.4

VW-10	LEL	CH_4	O_2	VOC
4/09/19	>100	3.6	0.6	0.5

VW-4	LEL	CH_4	O_2	VOC
4/02/19	0	0.2	17.2	0
4/09/19	0	0.0	13.0	0.6

VW-8	LEL	CH_4	O_2	VOC
4/02/19	0	0.2	1.3	0
4/09/19	0	0.0	2.2	1.8

VW-11	LEL	CH_4	O_2	VOC
4/09/19	15	0.4	0.0	0.6

VW-5	LEL	CH_4	O_2	VOC
4/02/19	4	0.3	20.3	0
4/09/19	0	0.0	19.8	0.4

VW-6	LEL	CH_4	O_2	VOC
4/02/19	0	0.1	15.6	0
4/09/19	0	0.0	16.7	1.5

VW-3	LEL	CH_4	O_2	VOC
4/02/19	2	0.2	13.7	0.3
4/09/19	0	0.0	11.5	0.4

VW-1	LEL	CH_4	O_2	VOC
4/02/19	0	0.1	13.7	0.2
4/09/19	0	0.0	19.0	1.0

VW-9	LEL	CH_4	O_2	VOC
4/09/19	0	0.0	20.1	0.7

VW-2	LEL	CH_4	O_2	VOC
4/02/19	>60	14.5	0.2	0
4/09/19	>100	14.3	0.0	0.3

N W 21 S T S T R E E T

N W 42 N D A V E N U E

N W 37 T H A V E N U E

N W 14 T H S T R E E T

GRAPELAND HEIGHTS SPORTS PARK

GRAPELAND WATER PARK

0' 500'
SCALE:

EE&G Enviromental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
(305)374-8300
(305)374-9004 :FAX

PROJECT:

PROPOSED
MIAMI FREEDOM PARK

(INTERNATIONAL LINKS
MELREESE
COUNTRY CLUB)

1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE
COUNTY, FLORIDA 33125

SHEET TITLE:

VAPOR WELL LOCATION & RESULTS MAP

Dwg. Date:	6/17/2019
Job No. :	2018-3057
Drawn By:	JML
App. By:	---
Scale:	JML
Cad File:	FIG-17
Revisions:	

Figure No.

17

TABLES

TABLE 1
TEST EXCAVATION DEBRIS INTERVALS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

Test Area Designation	Date Performed	Latitude (N)	Longitude (W)	Total Depth (feet-BLS)	Groundwater Depth (feet-BLS)	Debris Interval (feet-BLS)	Lithology	Soil Sample (feet-BLS)
TEST EXCAVATIONS								
TE-1	12-Mar-2019	25 47.577	-80 15.832	6.0	Not Encountered	0.5 - 6.0+	Golf course base sand 0 - 0.5, incinerator debris 0.5 - 6.0.	1.0 - 2.0
TE-2	12-Mar-2019	25 47.587	-80 15.721	7.0	5	1.5 - 7.0+	Golf course base sand 0 - 1.5, incinerator debris 1.5 - 7.0.	N/A
TE-3	12-Mar-2019	25 47.621	-80 15.645	5.0	Not Encountered	1.0 - 4.5	Golf course base sand 0 - 1.0, incinerator debris 1.0 - 4.5, tan silty clay w/ trace roots 4.5 - 5.0.	N/A
TE-4	12-Mar-2019	25 47.612	-80 15.538	5.0	5.0	1.5 - 2.0	Golf course base sand 0 - 1.5, incinerator debris 1.5 - 2.0, organic/peat material 2.0 - 3.0, tan silty clay w/ trace roots 3.0 - 5.0.	2.0 - 4.0
TE-5	18-Mar-2019	25 47.625	-80 15.444	6.0	5.0	2.0 - 4.5	Golf course base sand 0 - 0.5, woody debris & fill 0.5 - 1.5, sandy fill & concrete 1.5 - 2.0, incinerator debris 2.0 - 4.5, silt w/ trace roots 4.5 - 6.0.	N/A
TE-6	13-Mar-2019	25 47.548	-80 15.773	5.0	4.0	1.0 - 5.0+	Golf course base sand 0 - 1.0, incinerator debris 1.0 - 5.0.	N/A
TE-7	18-Mar-2019	25 47.583	-80 15.628	6.0	6.0	0.5 - 2.5	Golf course base sand 0 - 0.5, woody & some incinerator debris 0.5 - 2.5, brown sandy limestone 2.5 - 4.0, gray sandy limestone 4.0 - 5.5.	N/A
TE-8	18-Mar-2019	25 47.583	-80 15.439	5.0	4.5	1.5 - 4.0	Golf course base sand 0 - 0.5, woody debris & fill 0.5 - 1.0, sandy fill 1.0 - 1.5, incinerator debris 1.5 - 4.0, silt w/ trace roots 4.0 - 5.0.	N/A
TE-9	18-Mar-2019	25 47.584	-80 15.383	6.0	5.5	4.0 - 6.0+	Golf course base sand 0 - 1.5, woody debris & fill 1.5 - 4.0, incinerator debris 4.0 - 6.0.	2.0 - 4.0
TE-10	13-Mar-2019	25 47.541	-80 15.669	6.5	4.5	1.0 - 6.5+	Golf course base sand & tree roots 0 - 1.0, incinerator debris 1.0 - 6.5.	N/A
TE-11	18-Mar-2019	25 47.564	-80 15.513	3.5	3.0	1.0 - 3.5+	Golf course base sand 0 - 1.0, incinerator debris 1.0 - 3.5.	N/A
TE-12	18-Mar-2019	25 47.539	-80 15.618	4.5	4.5	1.0 - 3.0	Golf course base sand 0 - 1.0, incinerator debris 1.0 - 3.0, gray sand & limerock 3.0 - 4.5.	N/A
TE-13	13-Mar-2019	25 47.500	-80 15.728	6.0	Not Encountered	1.0 - 6.0+	Golf course base sand 0 - 1.0, incinerator debris 1.0 - 6.0.	2.0 - 4.0
TE-14	18-Mar-2019	25 47.521	-80 15.570	5.5	5.0	0.5 - 5.0	Golf course base sand 0 - 0.5, incinerator debris 0.5 - 5.0, tan sand 5.0 - 5.5.	0 - 2.0
TE-15	18-Mar-2019	25 47.471	-80 15.801	6.0	5.5	0.5 - 5.5	Golf course base sand 0 - 0.5, incinerator debris 0.5 - 5.5, tan sand & limestone 5.5 - 6.0.	N/A
TE-16	13-Mar-2019	25 47.480	-80 15.649	6.0	3.5	0.5 - 6.0+	Golf course base sand 0 - 0.5, incinerator debris 0.5 - 6.0.	N/A
TE-17	13-Mar-2019	25 47.454	-80 15.686	4.0	3.0	0.5 - 4.0+	Golf course base sand and organics 0 - 1.5, incinerator debris 1.5 - 6.0.	N/A
TE-18	18-Mar-2019	25 47.397	-80 15.829	3.5	3.0	Not Encountered	Golf course base sand 0 - 1.5, sand with organics 1.5 - 3.0, tan sand 3.0 - 3.5.	N/A

TABLE 1
TEST EXCAVATION DEBRIS INTERVALS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

Test Area Designation	Date Performed	Latitude (N)	Longitude (W)	Total Depth (feet-BLS)	Groundwater Depth (feet-BLS)	Debris Interval (feet-BLS)	Lithology	Soil Sample (feet-BLS)
TEST EXCAVATIONS								
TE-19	18-Mar-2019	25 47.411	-80 15.773	5.0	4.0	1.0 - 3.5 *	Golf course base sand 0 - 1.0, construction debris (rubble and sand) 1.0 - 3.5, tan sand & limestone 3.5 - 5.0.	2.0 - 4.0
TE-20	13-Mar-2019	25 47.407	-80 15.659	3.5	Not Encountered	1.0 - 3.5*	Golf course base sand 0 - 1.0, tan concrete debris (rubble and sand) 1.0 - 3.5, refusal at former roadway at 3.5.	N/A
TE-21	25-Mar-2019	25 47.377	-80 15.733	5.0	5.0	1.5 - 4.0*	Golf course base sand 0 - 1.0, construction debris (rubble and sand) 1.0 - 3.5, tan sand & limestone 3.5 - 5.0.	N/A
TE-22	13-Mar-2019	25 47.388	-80 15.601	6.5	5.5	2.5 - 6.5+	Golf course base sand 0 - 1.5, tan sand & limestone 1.5 - 2.5, incinerator debris 2.5 - 6.5.	N/A
TE-23	18-Mar-2019	25 47.358	-80 15.787	4.5	4.0	2.0 - 4.0*	Golf course base sand 0 - 1.0, organics 1. - 2.0, construction debris 2.0 - 4.0, tan sand & limestone 4.0 - 4.5.	N/A
TE-24	18-Mar-2019	25 47.319	-80 15.827	5.0	5.0	0.5 - 5.0*	Golf course base sand 0 - 0.5, tan construction debris (rubble, fiber and sand) 0.5 - 6.0, tan sand and limestone 6.0 - 6.5.	0 - 2.0 , 2.0 - 4.0
TE-25	25-Mar-2019	25 47.329	-80 15.668	4.5	4.0	1.0 - 4.5*	Golf course base sand 0 - 1.0, tan concrete debris (rubble and sand) 1.0 - 4.0, tan sand and limestone 4.0 - 4.5.	0 - 2.0
TE-26	13-Mar-2019	25 47.310	-80 15.620	5.0	5.0	1.0 - 3.5	Golf course base sand as 0 - 1.0, incinerator debris 1.0 - 3.5, organics 3.5 - 4.5, tan sand 4.5 - 5.0.	N/A
TE-27	25-Mar-2019	25 47.291	-80 15.732	3.0	3.0	0.25 - 2.5*	Golf course base sand 0 - 0.2.5, tan concrete debris (rubble and sand) 0.25 - 2.5, tan sand and limestone 2.5 - 3.0.	0 - 2.0
TE-28	25-Mar-2019	25 47.274	-80 15.798	6.0	Not Encountered	0.5 - 6.0*	Golf course base sand 0 - 0.5, tan concrete debris (rubble and sand) 0.5 - 2.5, tan sand and limestone 2.5 - 3.0.	0 - 2.0
TE-29	13-Mar-2019	25 47.279	-80 15.571	5.5	5.0	2.0 - 5.0	Golf course base sand 0 - 2.0, incinerator debris 2.0 - 5.0, tan sand & limerock 5.0 - 5.5.	0 - 1.0
TE-30	25-Mar-2019	25 47.254	-80 15.666	6.0	6.0	0.25 - 5.75	Golf course base sand 0 - 0.25, incinerator debris 0.250 - 5.75, tan sand & limerock 5.75 - 6.0.	N/A
TE-31	25-Mar-2019	25 47.201	-80 15.731	6.0	5.5	0.5 - 5.5*	Golf course base sand 0 - 0.5, tan sandy fill with some brick, concrete and limerock 0.5 - 5.5, tan sand and limestone 5.5 - 6.0.	2.0 - 4.0
TE-32	13-Mar-2019	25 47.342	-80 15.635	3.0	Not Encountered	Not Encountered	Golf course base sand 0 - 1.0, sand and gravel - septic drain field 1.0 - 3.0.	N/A
TE-32A	25-Mar-2019	25 47.222	-80 15.519	5.5	5.5	1.0 - 5.5*	Golf course base sand 0 - 1.0, tan concrete debris (rubble and sand) 1.0 - 5.5.	N/A
TE-33	25-Mar-2019	25 47.409	-80 15.514	6.5	5.5	1.5 - 6.0	Golf course base sand 0 - 1.5, incinerator debris 1.5 - 6.0, tan sand & limerock 6.0 - 6.5.	0 - 2.0 , 2.0 - 4.0

* Denotes tan colored fill material comprised of construction debris, concrete, bricks, fiber (carpet) and sand.

TABLE 2
EE SOIL BORING OVA/FID FIELD SCREENING RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

SOIL BORING DESIGNATION	DATE	DEPTH (FEET-BLS)	PARTS PER MILLION (TOTAL)	PARTS PER MILLION (WITH CARBON FILTER)	PARTS PER MILLION (NET)
SB-1	3/25/2019	0 – 2	< 1	NF	< 1
		2 – 4	356	93	**263**
		4 – 6	408	204	**204**
		6 – 8	71	31	**40**
SB-2	3/25/2019	0 – 2	119	42	**77**
		2 – 4	143	64	**79**
		4 – 6	18	7	**11**
		6 – 8	208	133	**75**
SB-3	3/25/2019	0 – 2	2	NF	2
		2 – 4	< 1	NF	< 1
		4 – 6	< 1	NF	< 1
		6 – 8	< 1	NF	< 1
SB-4	3/25/2019	0 – 2	< 1	NF	< 1
		2 – 4	< 1	NF	< 1
		4 – 6	219	56	**163**
		6 – 8	651	176	**475**
SB-5	3/25/2019	0 – 2	7	NF	7
		2 – 4	396	102	**294**
		4 – 6	216	81	**135**
		6 – 8	>6,740 (O/R)	NF	**>6,740 (O/R)**
		8 – 10	< 1	NF	< 1
		10 – 12	< 1	NF	< 1
SB-A	3/26/2019	0 – 2	114	17	**97**
		2 – 4	18	8	10
		4 – 6	85	16	**69**
		6 – 8	198	104	**94**
SB-6	3/26/2019	0 – 2	< 1	NF	< 1
		2 – 4	< 1	NF	< 1
		4 – 6	< 1	NF	< 1
		6 – 8	< 1	NF	< 1
SB-7	3/26/2019	0 – 2	1	NF	1
		2 – 4	< 1	NF	< 1
		4 – 6	95	46	**49**
		6 – 8	< 1	NF	< 1
SB-8	3/26/2019	0 – 2	43	11	**32**
		2 – 4	< 1	NF	< 1
		4 – 6	29	10	**19**
		6 – 8	6	NF	6

TABLE 2
EE SOIL BORING OVA/FID FIELD SCREENING RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

SOIL BORING DESIGNATION	DATE	DEPTH (FEET-BLS)	PARTS PER MILLION (TOTAL)	PARTS PER MILLION (WITH CARBON FILTER)	PARTS PER MILLION (NET)
SB-10	3/26/2019	0 – 2	33	7	**26**
		2 – 4	< 1	NF	< 1
		4 – 6	18	6	**12**
		6 – 8	11	2	9
SB-11	3/26/2019	0 – 2	< 1	NF	< 1
		2 – 4	161	17	**144**
		4 – 6	624	73	**551**
		6 – 8	464	79	**385**
		8 – 10	>6,000 (O/R)	NF	**>6,000 (O/R)**
		10 – 12	4,334	580	**3,754**
SB-12	3/26/2019	0 – 2	< 1	NF	< 1
		2 – 4	20	3	**17**
		4 – 6	1	NF	1
		6 – 8	2,348	318	**2,030**
		8 – 10	298	29	**269**
		10 – 12	27	4	**23**
SB-32	4/8/2019	0 – 2	1,100	280	**820**
		2 – 4	1,300	540	**760**
		4 – 6	630	52	**578**
		6 – 8	450	103	**347**

Notes:
NF = Not Charcoal Filtered
O/R = Over Range
Bold = Result above 10 parts per million action level

TABLE 3
TEST EXCAVATION SOIL ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

			Sample Designation:	**TE-1**	**TE-4**	**TE-13**	**TE-29**	**TE-9**	**TE-14**	**TE-24**	**TE-24**	**TE-19**	**TE-31**	**TE-27**	**TE-25**	**TE-33**	**TE-33**
			Date Collected:	**3/12/19**	**3/12/19**	**3/13/19**	**3/13/19**	**3/18/19**	**3/18/19**	**3/18/19**	**3/18/19**	**3/18/19**	**3/25/19**	**3/25/19**	**3/25/19**	**3/25/19**	**3/25/19**
			Depth (Feet-BLS):	**1 - 2**	**2 - 4**	**2 - 4**	**0 - 1**	**2 - 4**	**0 - 2**	**0 - 2**	**2 - 4**	**2 - 4**	**2 - 4**	**0 - 2**	**0 - 2**	**0 - 2**	**2 - 4**
Parameter	**Soil Cleanup Target Levels (SCTLs)**																
	Residential	**Commercial/Industrial**	**Leachability**														
Total Metals by 6010 (mg/kg)																	
Arsenic	2.1	12	***	***14.3***	**3.8**	**9.7**	***47.6***	***56.6***	**10**	**10.9**	**7.1**	**6.1**	**4.0**	***13.2***	**3.5**	***36.8***	***58.1***
Barium	120**	130,000	1,600	33.6	21.4	65.6	14.4	**141**	38.8	26.4	35.3	56.7	9.3	29.4	6.9	29.6	**329**
Cadmium	82	1,700	7.5	0.61	0.89	1.2	0.44	1.8	0.73	0.60	0.38	0.32	NT	NT	NT	NT	NT
Chromium	210	470	38	21.8	8.1	33.9	13.6	34.3	13.5	17.2	29.3	9.9	NT	NT	NT	NT	NT
Lead	400	1,400	***	105	181	202	28.7	361	120	99.7	49.4	69.7	14.8	169	15.0	159	***1,890***
Selenium	440	11,000	5.2	0.51 (U)	0.53 (U)	0.63 (U)	0.56 (I)	3.0 (U)	0.53 (U)	0.40 (U)	0.42 (U)	0.44 (U)	NT	NT	NT	NT	NT
Silver	410	8,200	17	0.89	0.73	0.98	0.35	4.2	1.6	0.56	0.67	0.65	NT	NT	NT	NT	NT
Total Metals by 7471 (mg/kg)																	
Mercury	3	17	2.1	0.093	0.31	0.14	0.024	0.080	0.085	0.096	0.075	0.061	NT	NT	NT	NT	NT
TCLP Metals by 1311 (mg/L)																	
Lead	5.0	5.0		0.046 (U)	0.046 (U)	0.046 (U)	NT	0.046 (U)	0.046 (U)	NT	NT	NT	NT	NT	NT	NT	NT
VOCs by 8260 (mg/kg)																	
MTBE	4,400	24,000	0.009	0.0026 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Benzene	1.2	1.7	0.007	0.0026 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	7,500	60,000	0.5	0.0028 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Ethylbenzene	1,500	9,200	0.6	0.0029 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Total Xylenes	130	700	0.2	0.0053 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethene (PCE)	8.8	18	0.03	0.0026 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene (TCE)	6.4	9.3	0.003	0.0029 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Cis-1,2-Dichloroethene	33	180	0.4	0.0026 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trans-1,2-Dichloroethene	53	290	0.7	0.0031 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Vinyl Chloride	0.2	0.8	0.007	0.0028 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Isopropylbenzene (IPB)	220	1,200	0.2	0.0030 (U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Acetone	11,000	68,000	25	0.031	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Other VOCs Tested	Varies Per Constituent			(U)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PAHs by 8270 (mg/kg)																	
Naphthalene	55	300	1.2	0.013 (U)	0.015 (U)	0.021 (I)	0.016 (U)	0.14	0.014 (U)	0.012 (U)	0.014 (U)	0.17	NT	NT	NT	NT	NT
1-Methyl Naphthalene	200	1,800	3.1	0.015 (U)	0.017 (U)	0.018 (U)	0.018 (U)	0.039 (I)	0.016 (U)	0.014 (U)	0.015 (U)	0.062	NT	NT	NT	NT	NT
2-Methyl Naphthalene	210	2,100	8.5	0.015 (U)	0.017 (U)	0.018 (U)	0.018 (U)	0.049 (I)	0.016 (U)	0.014 (U)	0.015 (U)	0.077	NT	NT	NT	NT	NT
Acenaphthene	2,400	20,000	2	0.013 (U)	0.015 (U)	0.016 (U)	0.016 (U)	0.024 (I)	0.014 (U)	0.012 (U)	0.014 (U)	0.024 (I)	NT	NT	NT	NT	NT
Acenaphthylene	1,800	20,000	27	0.012 (U)	0.014 (U)	0.015 (U)	0.015 (U)	0.023 (I)	0.013 (U)	0.011 (U)	0.012 (U)	0.024 (I)	NT	NT	NT	NT	NT
Anthracene	21,000	300,000	2,500	0.014 (U)	0.016 (U)	0.017 (U)	0.016 (U)	0.016 (U)	0.015 (U)	0.013 (U)	0.014 (U)	0.025 (I)	NT	NT	NT	NT	NT
Benzo(a)Anthracene	#	#	0.8	0.011 (U)	0.022 (I)	0.020 (I)	0.015 (I)	0.013 (U)	0.020 (I)	0.011 (I)	0.012 (I)	0.012 (I)	NT	NT	NT	NT	NT
Benzo(a)Pyrene	0.1	0.7	8	0.0097 (U)	0.018 (I)	0.014 (I)	0.012 (U)	0.011 (U)	0.014 (I)	0.0089 (U)	0.0098 (U)	0.0091 (U)	NT	NT	NT	NT	NT
Benzo(b)Fluoranthene	#	#	2.4	0.010 (U)	0.026 (I)	0.021 (I)	0.017 (I)	0.012 (U)	0.020 (I)	0.011 (I)	0.010 (U)	0.011 (I)	NT	NT	NT	NT	NT
Benzo(ghi)Perylene	2,500	52,000	32,000	0.0098 (U)	0.016 (I)	0.012 (U)	0.012 (U)	0.012 (U)	0.013 (I)	0.0090 (U)	0.0099 (U)	0.0092 (U)	NT	NT	NT	NT	NT
Benzo(k)Fluoranthene	#	#	24	0.010 (U)	0.012 (I)	0.013 (U)	0.012 (U)	0.012 (U)	0.011 (U)	0.0096 (U)	0.011 (U)	0.0098 (U)	NT	NT	NT	NT	NT
Chrysene	#	#	77	0.012 (U)	0.019 (I)	0.015 (U)	0.015 (U)	0.015 (U)	0.015 (I)	0.011 (U)	0.012 (U)	0.013 (I)	NT	NT	NT	NT	NT
Dibenzo(a,h)Anthracene	#	#	0.7	0.0090 (U)	0.010 (U)	0.011 (U)	0.011 (U)	0.011 (U)	0.0095 (U)	0.0082 (U)	0.0091 (U)	0.0084 (U)	NT	NT	NT	NT	NT
Fluoranthene	3,200	59,000	1,200	0.013 (U)	0.027 (I)	0.019 (I)	0.015 (U)	0.020 (I)	0.014 (I)	0.012 (U)	0.013 (U)	0.039	NT	NT	NT	NT	NT
Fluorene	2,600	33,000	160	0.014 (U)	0.016 (U)	0.017 (U)	0.017 (U)	0.037 (I)	0.015 (U)	0.013 (U)	0.014 (U)	0.043	NT	NT	NT	NT	NT
Indeno(123-cd)Pyrene	#	#	6.6	0.0089 (U)	0.011 (I)	0.011 (U)	0.011 (U)	0.011 (U)	0.0095 (U)	0.0082 (U)	0.0090 (U)	0.0083 (U)	NT	NT	NT	NT	NT
Phenanthrene	2,200	36,000	250	0.013 (U)	0.015 (U)	0.015 (U)	0.015 (U)	0.063	0.014 (U)	0.012 (U)	0.013 (U)	0.099	NT	NT	NT	NT	NT
Pyrene	2,400	45,000	880	0.012 (U)	0.026 (I)	0.019 (I)	0.015 (U)	0.024 (I)	0.014 (I)	0.011 (U)	0.012 (U)	0.044	NT	NT	NT	NT	NT
BaP TEF Equivalents	0.1	0.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NT	NT	NT	NT	NT
TPH by FL-PRO (mg/kg)																	
TPH, Total	460	2,700	340	38.1	128	3.6 (U)	52.3	189	9.7	4.5	3.0 (U)	238	NT	NT	NT	NT	NT
Dioxins/Furans by 8290 (ng/kg)																	
Dioxins/Furans, Total	7	30	3,000	3.79	**11.18**	3.23	0.46	**15.49**	4.42	5.97	1.97	6.84	1.55	NT	NT	**24.58**	***177.47***

Notes:

mg/kg = milligrams per kilograms
mg/L = milligrams per liter
ng/kg = nanograms per kilograms
TCLP **=** Toxicity Characteristic Leaching Procedure
Bold = Analytical result exceeded the Residential SCTL
Bold = Analytical result exceeded the Commercial and/or Leachability SCTL
U = Results below the laboratory method detection limits
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
NT = Not Tested
** = Direct exposure value based on acute toxicity considerations
*** = Leachability determined via SPLP analysis
# = Must be converted to benzo(a) pyrene equivalent

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Instructions can be found below the table

Facility/Site Name:	Melreese Golf Course
Site Location:	1802 NW 37th Avenue, Miami, FL 33125
Facility/Site ID No.:	

SCTL Type	Value	Units
Residential Direct Exposure SCTL	0.1	mg/kg
Industrial Direct Exposure SCTL	0.7	mg/kg
Alternative SCTL (Optional)		mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	TE-1	TE-4	TE-9	TE-14	TE-19	TE-24	TE-24	TE-13	TE-29	
	Sample Date	3/12/2019	3/12/2019	3/18/2019	3/18/2019	3/18/2019	3/18/2019	3/18/2019	3/13/2019	3/13/2019	
	Sample Location:										
	Depth (ft):	1.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 1.0	
Contaminant Concentrations											
Contaminant	**TEF**	TE-1 (mg/kg)	TE-4 (mg/kg)	TE-9 (mg/kg)	TE-14 (mg/kg)	TE-19 (mg/kg)	TE-24 (mg/kg)	TE-24 (mg/kg)	TE-13 (mg/kg)	TE-29 (mg/kg)	
Benzo(a)pyrene	1.0	0.00485	0.018	0.0055	0.014	0.00455	0.00445	0.0049	0.014	0.006	
Benzo(a)anthracene	0.1	0.0055	0.022	0.0065	0.02	0.012	0.011	0.012	0.02	0.015	
Benzo(b)fluoranthene	0.1	0.005	0.026	0.006	0.02	0.011	0.011	0.005	0.021	0.017	
Benzo(k)fluoranthene	0.01	0.005	0.012	0.006	0.0055	0.0049	0.0048	0.0055	0.0065	0.006	
Chrysene	0.001	0.006	0.019	0.0075	0.015	0.013	0.0055	0.006	0.0075	0.0075	
Dibenz(a,h)anthracene	1.0	0.0045	0.005	0.0055	0.00475	0.0042	0.0041	0.00455	0.0055	0.0055	
Indeno(1,2,3-cd)pyrene	0.1	0.00445	0.011	0.0055	0.00475	0.00415	0.0041	0.0045	0.0055	0.0055	
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	TE-1 (mg/kg)	TE-4 (mg/kg)	TE-9 (mg/kg)	TE-14 (mg/kg)	TE-19 (mg/kg)	TE-24 (mg/kg)	TE-24 (mg/kg)	TE-13 (mg/kg)	TE-29 (mg/kg)	
Benzo(a)pyrene	1.0	0.0049	0.0180	0.0055	0.0140	0.0046	0.0045	0.0049	0.0140	0.0060	0.0000
Benzo(a)anthracene	0.1	0.0006	0.0022	0.0007	0.0020	0.0012	0.0011	0.0012	0.0020	0.0015	0.0000
Benzo(b)fluoranthene	0.1	0.0005	0.0026	0.0006	0.0020	0.0011	0.0011	0.0005	0.0021	0.0017	0.0000
Benzo(k)fluoranthene	0.01	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001	0.0001	0.0001	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dibenz(a,h)anthracene	1.0	0.0045	0.0050	0.0055	0.0048	0.0042	0.0041	0.0046	0.0055	0.0055	0.0000
Indeno(1,2,3-cd)pyrene	0.1	0.0004	0.0011	0.0006	0.0005	0.0004	0.0004	0.0005	0.0006	0.0006	0.0000
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**TE-1 (mg/kg)**	**TE-4 (mg/kg)**	**TE-9 (mg/kg)**	**TE-14 (mg/kg)**	**TE-19 (mg/kg)**	**TE-24 (mg/kg)**	**TE-24 (mg/kg)**	**TE-13 (mg/kg)**	**TE-29 (mg/kg)**	
The Residential Direct Exposure SCTL of 0.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure SCTL of 0.7 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Alternative SCTL Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

TABLE 5
TEST EXCAVATION
DIOXIN/FURAN CONGENER SUMMARY RESULTS
MARCH 2019
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

Congener	TEF	TE-1 (1'-2')	Converted Results*	TE-4 (2'-4')	Converted Results*	TE-9 (2'-4')	Converted Results*	TE-13 (2'-4')	Converted Results*	TE-14 (0'-2')	Converted Results*	TE-19 (2'-4')	Converted Results*
2,3,7,8-TCDD	1	0.44	0.44	0.27	0.27	1.5	1.5	0.11	0.105	0.35	0.35	0.395	0.395
1,2,3,7,8-PeCDD	1	0.82	0.82	1.70	1.7	4.6	4.6	0.75	0.75	0.25	0.25	2.0	2
1,2,3,4,7,8-HxCDD	0.1	0.66	0.066	1.90	0.19	3.7	0.37	0.80	0.08	1.50	0.15	1.8	0.18
1,2,3,6,7,8-HxCDD	0.1	4.10	0.41	5.40	0.54	14	1.4	3.30	0.33	7.20	0.72	7.3	0.73
1,2,3,7,8,9-HxCDD	0.1	2.60	0.26	3.30	0.33	11	1.1	1.90	0.19	4.90	0.49	5.0	0.5
1,2,3,4,6,7,8-HpCDD	0.01	100.00	1	43.00	0.43	370	3.7	90	0.9	190	1.9	190	1.9
OCDD	0.0001	830.00	0.083	240.00	0.024	3400	0.34	690	0.069	960	0.096	1200	0.12
2,3,7,8-TCDF	0.1	0.82	0.082	2.00	0.2	4.3	0.43	0.75	0.075	0.45	0.045	1.2	0.12
1,2,3,7,8-PeCDF	0.05	0.38	0.019	2.10	0.105	0.79	0.0395	0.37	0.0185	0.16	0.008	0.69	0.0345
2,3,4,7,8-PeCDF	0.5	0.74	0.37	11.00	5.5	1.2	0.6	0.81	0.405	0.36	0.18	1.0	0.5
1,2,3,4,7,8-HxCDF	0.1	0.49	0.049	3.00	0.3	0.91	0.091	0.63	0.063	0.45	0.045	0.55	0.055
1,2,3,6,7,8-HxCDF	0.1	0.53	0.053	4.90	0.49	4.5	0.45	0.75	0.075	0.46	0.046	1.20	0.12
2,3,4,6,7,8-HxCDF	0.1	0.63	0.063	7.70	0.77	1.4	0.14	0.76	0.076	0.46	0.046	0.95	0.095
1,2,3,7,8,9-HxCDF	0.1	0.08	0.008	1.20	0.12	0.12	0.012	0.18	0.018	0.07	0.007	0.32	0.032
1,2,3,4,6,7,8-HpCDF	0.01	6.10	0.061	19.00	0.19	71	0.71	7.40	0.074	8.60	0.086	5.2	0.052
1,2,3,4,7,8,9-HpCDF	0.01	0.15	0.00145	1.80	0.018	0.375	0.00375	0.45	0.0045	0.15	0.0015	0.81	0.0081
OCDF	0.0001	13.00	0.0013	15.00	0.0015	39	0.0039	13.00	0.0013	18.00	0.0018	13	0.0013
Total Concentration of Dioxin/Furan Congeners =			3.79		**11.18**		**15.49**		3.23		4.42		6.84

Congener	TEF	TE-24 (0'-2')	Converted Results*	TE-24 (2'-4')	Converted Results*	TE-29 (0'-1')	Converted Results*	TE-31 (2'-4')	Converted Results*	TE-33 (0'-2')	Converted Results*	TE-33 (2'-4')	Converted Results*
2,3,7,8-TCDD	1	0.18	0.18	0.38	0.38	0.12	0.115	0.09	0.085	1.20	1.2	17.00	17
1,2,3,7,8-PeCDD	1	1.5	1.5	0.225	0.225	0.065	0.065	0.280	0.28	7.100	7.1	43.000	43
1,2,3,4,7,8-HxCDD	0.1	1.5	0.15	0.38	0.038	0.08	0.0075	0.14	0.0135	8.00	0.8	60.00	6
1,2,3,6,7,8-HxCDD	0.1	5.7	0.57	1.5	0.15	0.5	0.049	1.1	0.11	19.0	1.9	200.0	20
1,2,3,7,8,9-HxCDD	0.1	4.3	0.43	1.1	0.11	0.3	0.031	0.7	0.066	13.0	1.3	160.0	16
1,2,3,4,6,7,8-HpCDD	0.01	150	1.5	44	0.44	9	0.094	31	0.31	190	1.9	6000	60
OCDD	0.0001	1200	0.12	430	0.043	100	0.01	320	0.032	1100	0.11	69000	6.9
2,3,7,8-TCDF	0.1	0.97	0.097	0.405	0.0405	0.085	0.0085	0.295	0.0295	4.100	0.41	3.900	0.39
1,2,3,7,8-PeCDF	0.05	0.31	0.0155	0.245	0.01225	0.090	0.0045	0.205	0.01025	5.200	0.26	2.900	0.145
2,3,4,7,8-PeCDF	0.5	1.6	0.8	0.61	0.305	0.07	0.035	0.69	0.345	11.00	5.5	5.80	2.9
1,2,3,4,7,8-HxCDF	0.1	1.50	0.15	0.48	0.048	0.09	0.009	0.77	0.077	10.00	1	4.10	0.41
1,2,3,6,7,8-HxCDF	0.1	1.40	0.14	0.45	0.045	0.07	0.0065	0.50	0.05	9.50	0.95	2.80	0.28
2,3,4,6,7,8-HxCDF	0.1	1.50	0.15	0.65	0.065	0.07	0.007	0.67	0.067	13.00	1.3	9.70	0.97
1,2,3,7,8,9-HxCDF	0.1	0.11	0.011	0.085	0.0085	0.080	0.008	0.120	0.012	2.800	0.28	1.800	0.18
1,2,3,4,6,7,8-HpCDF	0.01	14	0.14	5.50	0.055	1.20	0.012	6.20	0.062	52.00	0.52	300.00	3
1,2,3,4,7,8,9-HpCDF	0.01	1.1	0.011	0.23	0.0023	0.07	0.0007	0.20	0.002	4.90	0.049	18.00	0.18
OCDF	0.0001	24	0.0024	11.00	0.0011	2.20	0.00022	15.00	0.0015	52.00	0.0052	1100.00	0.11
Total Concentration of Dioxin/Furan Congeners =			5.97		1.97		0.46		1.55		**24.58**		***177.47***

SCTL-R = 7 ng/kg
SCTL-C = 30 ng/kg
SCTL-L = 3,000 ng/kg

Notes:
All values given in nanograms per kilogram (ng/kg)
* Compounds that were below laboratory method detection limits were reported as 1/2 of the method detection limit concentration for assessment of the TEQ.
SCTL-R = Residential Soil Cleanup Target Level
SCTL-C = Commercial/Industrial Soil Cleanup Target Level
SCTL-L = Leachability Soil Cleanup Target Level
Bold = Analytical result exceeded the Residential SCTL
Bold = Analytical result exceeded the Commercial and/or Leachability SCTL

TABLE 6
EE&G SOIL BORING ANALYTICAL RESULTS
(ARSENIC, BARIUM, LEAD)
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

		Parameter:	Arsenic (mg/kg)	Barium (mg/kg)	Lead (mg/kg)	TCLP-Arsenic (mg/L)	TCLP-Lead (mg/L)
		SCTL-R	2.1	120**	400	NA	NA
		SCTL-C	12	130,000	1,400	NA	NA
		SCTL-L	***	***	***	NA	NA
		TCLP-RL	NA	NA	NA	5.0	5.0
Soil Boring	**Date**	**Depth (Feet-BLS)**					
SB-1	3/25/2019	**0 - 0.5**	***16.9***	10.8	10.1	NT	NT
		0.5 - 2	***15.5***	11.4	27.2	NT	NT
		2 - 4	**6.2**	41.5	98.0	NT	NT
		3.5 - 4.5	NT	NT	NT	NT	NT
SB-2	3/25/2019	**0 - 0.5**	***17.3***	9.3	5.8	NT	NT
		0.5 - 2	**2.3**	5.0	3.3	NT	NT
		2 - 4	0.97	3.5	6.5	NT	NT
		4 - 6	**4.2**	9.6	47.6	NT	NT
SB-3	3/25/2019	**0 - 0.5**	***23.0***	6.5	7.0	NT	NT
		0.5 - 2	**6.7**	7.8	19.6	NT	NT
		2 - 4	0.43 (I)	4.4	0.66	NT	NT
SB-4	3/25/2019	**0 - 0.5**	***156***	41.9	212	0.071 (U)	0.046 (U)
		0.5 - 2	***12.0***	48.9	145	NT	NT
		2 - 4	***89.4***	**527**	***2,410***	NT	0.29
SB-5	3/25/2019	**0 - 0.5**	***47.8***	17.5	62.3	NT	NT
		0.5 - 2	**7.0**	16.3	29.7	NT	NT
		2 - 4	***24.3***	59.6	**430**	NT	NT
SB-6	3/26/2019	**0 - 0.5**	***13.3***	20.5	16.2	NT	NT
		0.5 - 2	0.30 (U)	6.2	8.7	NT	NT
		2 - 4	0.52 (I)	3.3	5.3	NT	NT
SB-7	3/26/2019	**0 - 0.5**	***18.8***	29.2	174	NT	NT
		0.5 - 2	***275***	**278**	***1,560***	0.15	0.12
		2 - 4	***32.0***	**698**	***3,090***	NT	0.13
SB-8	3/26/2019	**0 - 0.5**	***29.8***	11.8	7.3	NT	NT
		0.5 - 2	***17.9***	49.9	152	NT	NT
		2 - 4	***26.9***	**182**	**525**	NT	NT
SB-9	3/26/2019	**0 - 0.5**	**2.3**	36.3	69.9	NT	NT
		0.5 - 2	***14.9***	**225**	**636**	NT	NT
		2 - 4	**7.8**	**129**	**409**	NT	NT
SB-10	3/26/2019	**0 - 0.5**	***12.6***	7.4	7.9	NT	NT
		0.5 - 2	***13.7***	31.5	259	NT	NT
		2 - 4	0.53 (I)	12.9	5.2	NT	NT
SB-11	3/26/2019	**0 - 0.5**	**8.7**	8.5	10.1	NT	NT
		0.5 - 2	**8.2**	30.0	92.9	NT	NT
		2 - 4	**10.0**	41.0	160	NT	NT
		4 - 6	**8.2**	50.7	64.3	NT	NT
		6 - 8	***36.1***	**292**	***1,850***	NT	NT
SB-12	3/26/2019	**0 - 0.5**	**11.3**	10.3	10.8	NT	NT
		0.5 - 2	**5.0**	**1,270**	23.2	NT	NT
		2 - 4	**8.3**	28.2	62.1	NT	NT
		4 - 6	***78.1***	**254**	***1,900***	NT	NT
		6 - 7	***152***	**4,020**	***4,510***	0.071 (U)	0.34
SB-13	3/27/2019	**0 - 0.5**	**2.5**	7.8	13.7	NT	NT
		0.5 - 2	1.7	88.8	11.0	NT	NT
		2 - 4	***47.0***	19.4	16.6	NT	NT
		4 - 6	**3.6**	22.3	395	NT	NT
SB-14	3/27/2019	**0 - 0.5**	***31.0***	25.5	165	NT	NT
		0.5 - 2	***15.8***	**145**	**1,110**	NT	NT
		2 - 4	***63.0***	**523**	**1,210**	NT	NT
SB-15	3/27/2019	**0 - 0.5**	**2.8**	7.7	8.8	NT	NT
		0.5 - 2	***12.0***	15.3	85.7	NT	NT
		2 - 4	***14.4***	**124**	168	NT	NT
		4 - 6	***40.0***	**714**	***1,870***	NT	NT
		6 - 8	***25.0***	39.3	61.8	NT	NT
SB-16	3/27/2019	**0 - 0.5**	0.94	5.3	5.7	NT	NT
		0.5 - 2	**10.4**	10.3	3.4	NT	NT
		2 - 4	**3.0**	33.4	113	NT	NT
		4 - 6	**3.4**	20.4	26.5	NT	NT
		6 - 8	***25.3***	**207**	***4,980***	NT	NT
SB-17	3/27/2019	**0 - 0.5**	***14.3***	9.2	5.2	NT	NT
		0.5 - 2	**9.8**	51.2	142	NT	NT
		2 - 4	**9.9**	**131**	**699**	NT	NT
		4 - 6	***18.2***	**216**	**1,090**	NT	NT
SB-18	3/27/2019	**0 - 0.5**	***13.6***	13.2	8.6	NT	NT
		0.5 - 2	***13.3***	13.7	29.3	NT	NT
		2 - 4	**4.0**	20.9	46.0	NT	NT
		4 - 6	**6.4**	29.1	167	NT	NT
		6 - 8	***29.7***	**278**	**624**	NT	NT
SB-19	3/27/2019	**0 - 0.5**	***22.9***	31.9	195	NT	NT
		0.5 - 2	**8.2**	54.1	176	NT	NT
		2 - 4	***12.8***	**208**	**524**	NT	NT
SB-20	3/27/2019	**0 - 0.5**	***27.8***	18.1	42.1	NT	NT
		0.5 - 2	1.2	11.7	8.3	NT	NT
		2 - 4	***29.5***	**212**	**500**	NT	NT
SB-21	3/27/2019	**0 - 0.5**	***19.5***	10.5	12.0	NT	NT
		0.5 - 2	***16.1***	24.2	91.2	NT	NT
		2 - 4	***49.7***	85.5	**661**	NT	NT
		4 - 6	***12.4***	**148**	298	NT	NT
		6 - 8	***85.0***	**507**	393	NT	NT
SB-22	3/27/2019	**0 - 0.5**	***12.8***	7.5	9.2	NT	NT
		0.5 - 2	0.73	5.8	9.3	NT	NT
		2 - 4	0.27 (U)	4.0	3.0	NT	NT
		4 - 6	***47.7***	**215**	***3,180***	NT	NT
SB-23	3/27/2019	**0 - 0.5**	***30.2***	7.5	16.8	NT	NT
		0.5 - 2	***30.4***	14.0	70.7	NT	NT
		2 - 4	***12.8***	22.1	53.3	NT	NT
		4 - 6	0.56	4.1	3.3	NT	NT
SB-24	3/27/2019	**0 - 0.5**	***29.3***	6.6	7.7	NT	NT
		0.5 - 2	***36.4***	20.1	***3,140***	NT	NT
		2 - 4	***26.4***	82.4	255	NT	NT
		4 - 6	***22.5***	**150**	299	NT	NT
SB-25	3/27/2019	**0 - 0.5**	***19.4***	9.2	23.9	NT	NT
		0.5 - 2	**2.7**	22.9	69.8	NT	NT
		2 - 4	**7.1**	26.2	41.6	NT	NT
		4 - 6	**6.8**	20.4	56.5	NT	NT
SB-26	3/27/2019	**0 - 0.5**	***19.5***	14.3	29.8	NT	NT
		0.5 - 2	**9.6**	12.6	15.3	NT	NT
		2 - 4	1.6	3.5	3.4	NT	NT
SB-27	3/27/2019	**0 - 0.5**	**5.5**	7.2	5.1	NT	NT
		0.5 - 2	2.0	7.3	4.1	NT	NT
		2 - 4	**2.3**	7.7	14.4	NT	NT
SB-28	3/27/2019	**0 - 0.5**	**3.6**	22.9	18.0	NT	NT
		0.5 - 2	0.29 (U)	6.9	13.7	NT	NT
		2 - 4	0.71	4.7	5.0	NT	NT
		4 - 6	**4.8**	24.1	85.4	NT	NT
SB-29	4/8/2019	**0 - 0.5**	***27.5***	NT	5.8	NT	NT
		0.5 - 2	***12.5***	NT	116	NT	NT
		2 - 4	**2.4**	NT	381	NT	NT
SB-30	4/8/2019	**0 - 0.5**	***27.7***	NT	5.9	NT	NT
		0.5 - 2	**5.1**	NT	78.6	NT	NT
		2 - 4	**4.1**	NT	26.3	NT	NT
SB-31	4/8/2019	**0 - 0.5**	**6.0**	NT	7.4	NT	NT
		0.5 - 2	**5.1**	NT	10.1	NT	NT
		2 - 4	**3.5**	NT	25.5	NT	NT
		4 - 6	**2.2**	NT	96.7	NT	NT
SB-32	4/8/2019	**0 - 0.5**	**7.7**	NT	28.2	NT	NT
		0.5 - 2	***22.7***	NT	***5,820***	NT	0.17
		2 - 4	**10.0**	NT	**1,020**	NT	NT
SB-33	4/8/2019	**0 - 0.5**	0.56 (I)	NT	3.9	NT	NT
		0.5 - 2	1.4	NT	3.3	NT	NT
		2 - 4	***16.6***	NT	42.0	NT	NT
SB-34	4/8/2019	**0 - 0.5**	**9.2**	NT	49.8	NT	NT
		0.5 - 2	***52.8***	NT	216	NT	NT
		2 - 4	***49.3***	NT	***7,650***	NT	0.50
SB-35	4/8/2019	**0 - 0.5**	**3.4**	NT	6.3	NT	NT
		0.5 - 2	**7.4**	NT	97.7	NT	NT
		2 - 4	**10.4**	NT	***1,720***	NT	NT
SB-36	4/8/2019	**0 - 0.5**	***20.4***	NT	21.1	NT	NT
		0.5 - 2	**12.0**	NT	**462**	NT	NT
		2 - 4	***19.1***	NT	106	NT	NT
SB-37	4/8/2019	**0 - 0.5**	**12.0**	NT	10.0	NT	NT
		0.5 - 2	***12.7***	NT	224	NT	NT
		2 - 4	***75.9***	NT	***1,920***	NT	NT

Notes:
mg/kg = milligrams per kilograms
mg/L = milligrams per liter
Bold = Analytical result exceeded the Residential SCTL
***Bold* =** Analytical result exceeded the Commercial and/or Leachability SCTL
SCTL-R = Soil Cleanup Target Level Residential Exposure Limit
SCTL-C = Soil Cleanup Target Level Commercial/Industrial Exposure Limit
SCTL-L = Soil Cleanup Target Level Leachability Exposure Limit
TCLP-RL = Toxicity Characteristic Leaching Procedure Regulatory Level
NT = Sample not tested for indicated parameter
NA = Not Applicable
U = Results below the laboratory method detection limits
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
** = Direct exposure value based on acute toxicity considerations
*** = Leachability determined via SPLP analysis

TABLE 7
EE&G SOIL BORING ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

				Sample Designation:	SB-1	SB-3	SB-4	SB-9	SB-12
				Date Collected:	3/25/19	3/25/19	3/25/19	3/26/19	3/26/19
				Depth (Feet-BLS):	3.5 - 4.5	0.5 - 2	0.5 - 2	2 - 4	6 - 7
Parameter	**Soil Cleanup Target Levels (SCTLs)**			**TCLP**					
	Residential	**Commercial/Industrial**	**Leachability**	**Regulatory Level**					
Total Metals by 6010 (mg/kg)									
Arsenic	2.1	12	***	NA	NT	**6.7**	12.0	**7.8**	***152***
Barium	120**	130,000	1,600	NA	NT	7.8	48.9	**129**	***4,020***
Cadmium	82	1,700	7.5	NA	NT	NT	NT	2.2	*18.3*
Chromium	210	470	38	NA	NT	NT	NT	23.1	*78.2*
Lead	400	1,400	***	NA	NT	19.6	145	**409**	***4,510***
Selenium	440	11,000	5.2	NA	NT	NT	NT	2.1 (U)	63.5 (U)
Silver	410	8,200	17	NA	NT	NT	NT	1.6	7.3
Total Metals by 7471 (mg/kg)									
Mercury	3	17	2.1	NA	NT	NT	NT	0.34	0.42
TCLP Metals by 1311 (mg/L)									
Arsenic	NA	NA	NA	5.0	NT	NT	NT	NT	0.071 (U)
Lead	NA	NA	NA	5.0	NT	NT	NT	NT	0.34
VOCs by 8260 (mg/kg)									
MTBE	4,400	24,000	0.009	NA	NT	NT	NT	0.0030 (U)	NT
Benzene	1.2	1.7	0.007	NA	NT	NT	NT	0.0030 (U)	NT
Toluene	7,500	60,000	0.5	NA	NT	NT	NT	0.0032 (U)	NT
Ethylbenzene	1,500	9,200	0.6	NA	NT	NT	NT	0.0033 (U)	NT
Total Xylenes	130	700	0.2	NA	NT	NT	NT	0.0061 (U)	NT
Tetrachloroethene (PCE)	8.8	18	0.03	NA	NT	NT	NT	0.011	NT
Trichloroethene (TCE)	6.4	9.3	0.003	NA	NT	NT	NT	0.0033 (U)	NT
Cis-1,2-Dichloroethene	33	180	0.4	NA	NT	NT	NT	0.0030 (U)	NT
Trans-1,2-Dichloroethene	53	290	0.7	NA	NT	NT	NT	0.0036 (U)	NT
Vinyl Chloride	0.2	0.8	0.007	NA	NT	NT	NT	0.0032 (U)	NT
Isopropylbenzene (IPB)	220	1,200	0.2	NA	NT	NT	NT	0.0034 (U)	NT
Acetone	11,000	68,000	25	NA	NT	NT	NT	0.083	NT
Other VOCs Tested	Varies Per Constituent			NA	NT	NT	NT	(U)	NT
PAHs by 8270 (mg/kg)									
Naphthalene	55	300	1.2	NA	0.014 (U)	0.013 (U)	0.013 (U)	0.044 (U)	0.053 (U)
1-Methyl Naphthalene	200	1,800	3.1	NA	0.016 (U)	0.015 (U)	0.015 (U)	0.050 (U)	0.060 (U)
2-Methyl Naphthalene	210	2,100	8.5	NA	0.015 (U)	0.015 (U)	0.014 (U)	0.049 (U)	0.058 (U)
Acenaphthene	2,400	20,000	2	NA	0.014 (U)	0.014 (U)	0.013 (U)	0.044 (U)	0.053 (U)
Acenaphthylene	1,800	20,000	27	NA	0.012 (U)	0.012 (U)	0.012 (U)	0.040 (U)	0.048 (U)
Anthracene	21,000	300,000	2,500	NA	0.014 (U)	0.014 (U)	0.013 (U)	0.045 (U)	0.054 (U)
Benzo(a)Anthracene	#	#	0.8	NA	0.011 (U)	0.011 (U)	0.014 (I)	0.037 (U)	0.044 (U)
Benzo(a)Pyrene	0.1	0.7	8	NA	0.0098 (U)	0.0097 (U)	0.012 (I)	0.032 (U)	0.038 (U)
Benzo(b)Fluoranthene	#	#	2.4	NA	0.011 (U)	0.010 (U)	0.020 (I)	0.034 (U)	0.041 (U)
Benzo(ghi)Perylene	2,500	52,000	32,000	NA	0.010 (U)	0.0098 (U)	0.0094 (U)	0.032 (U)	0.039 (U)
Benzo(k)Fluoranthene	#	#	24	NA	0.011 (U)	0.010 (U)	0.010 (U)	0.034 (U)	0.041 (U)
Chrysene	#	#	77	NA	0.013 (U)	0.012 (U)	0.013 (I)	0.041 (U)	0.049 (U)
Dibenzo(a,h)Anthracene	#	#	0.7	NA	0.0091 (U)	0.0090 (U)	0.0086 (U)	0.029 (U)	0.035 (U)
Fluoranthene	3,200	59,000	1,200	NA	0.013 (U)	0.013 (U)	0.017 (I)	0.042 (U)	0.050 (U)
Fluorene	2,600	33,000	160	NA	0.014 (U)	0.014 (U)	0.013 (U)	0.046 (U)	0.055 (U)
Indeno(123-cd)Pyrene	#	#	6.6	NA	0.0091 (U)	0.0090 (U)	0.0086 (U)	0.029 (U)	0.035 (U)
Phenanthrene	2,200	36,000	250	NA	0.013 (U)	0.013 (U)	0.012 (U)	0.042 (U)	0.050 (U)
Pyrene	2,400	45,000	880	NA	0.013 (U)	0.012 (U)	0.016 (I)	0.040 (U)	0.048 (U)
BaP TEF Equivalents	0.1	0.7		NA	0.0	0.0	0.0	0.0	0.0
TPH by FL-PRO (mg/kg)									
TPH, Total	460	2,700	340	NA	NT	NT	NT	222	*436*
Dioxins/Furans by 8290 (ng/kg)									
Dioxins/Furans, Total	7	30	3,000	NA	***75.87***	0.72	**11.21**	**7.09**	**10.40**
Chlorinated Pesticides by 8081 (mg/kg)									
Aldrin	0.06	0	0.2	NA	NT	NT	NT	0.00075 (U)	NT
Chlordane (Technical)	2.8	14	9.6	NA	NT	NT	NT	0.28	NT
4,4'-DDE	2.9	15	18	NA	NT	NT	NT	0.012 (I)	NT
4,4'-DDT	2.9	15	11	NA	NT	NT	NT	0.0012 (U)	NT
Dieldrin	0.06	0	0.002	NA	NT	NT	NT	***0.0050 (I)***	NT
Other Chlorinated Pesticdies Tested	Varies Per Constituent			NA	NT	NT	NT	(U)	NT
Organophosphorous Pesticides by 8141 (mg/kg)									
All Organophosphorous Pesticides Tested	Varies Per Constituent			NA	NT	NT	NT	(U)	NT
Chlorophenoxy Herbicides by 8151 (mg/kg)									
All Chlorophenoxy Herbicides Tested	Varies Per Constituent			NA	NT	NT	NT	(U)	NT

Notes:

mg/kg = milligrams per kilograms
mg/L = milligrams per liter
ng/kg = nanograms per kilograms
TCLP = Toxicity Characteristic Leaching Procedure
Bold = Analytical result exceeded the Residential SCTL
Bold = Analytical result exceeded the Commercial and/or Leachability SCTL
U = Results below the laboratory method detection limits
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
NT = Sample not tested for indicated parameter
** = Direct exposure value based on acute toxicity considerations
*** = Leachability determined via SPLP analysis
# = Must be converted to benzo(a)pyrene equivalent

Benzo(a)pyrene Conversion Table

For Direct Exposure Soil Cleanup Target Levels

Instructions can be found below the table

Facility/Site Name:	Melreese Golf Course
Site Location:	1802 NW 37th Avenue, Miami, FL 33125
Facility/Site ID No.:	

SCTL Type	Value	Units
Residential Direct Exposure SCTL	0.1	mg/kg
Industrial Direct Exposure SCTL	0.7	mg/kg
Alternative SCTL (Optional)		mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	SB-1	SB-3	SB-4	SB-9	SB-12					
	Sample Date	3/25/2019	3/25/2019	3/25/2019	3/26/2019	3/26/2019					
	Sample Location:										
	Depth (ft):	3.5 - 4.5	0.5 - 2.0	0.5 - 2.0	2.0 - 4.0	6.0 - 7.0					
Contaminant Concentrations											
Contaminant	**TEF**	SB-1 (mg/kg)	SB-3 (mg/kg)	SB-4 (mg/kg)	SB-9 (mg/kg)	SB-12 (mg/kg)					
Benzo(a)pyrene	1.0	0.0049	0.00485	0.012	0.016	0.019					
Benzo(a)anthracene	0.1	0.0055	0.0055	0.014	0.0185	0.022					
Benzo(b)fluoranthene	0.1	0.0055	0.005	0.02	0.017	0.0205					
Benzo(k)fluoranthene	0.01	0.0055	0.005	0.005	0.017	0.0205					
Chrysene	0.001	0.0065	0.006	0.013	0.0205	0.0245					
Dibenz(a,h)anthracene	1.0	0.00455	0.0045	0.0043	0.0145	0.0175					
Indeno(1,2,3-cd)pyrene	0.1	0.00455	0.0045	0.0043	0.0145	0.0175					
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	SB-1 (mg/kg)	SB-3 (mg/kg)	SB-4 (mg/kg)	SB-9 (mg/kg)	SB-12 (mg/kg)					
Benzo(a)pyrene	1.0	0.0049	0.0049	0.0120	0.0160	0.0190	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(a)anthracene	0.1	0.0006	0.0006	0.0014	0.0019	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(b)fluoranthene	0.1	0.0006	0.0005	0.0020	0.0017	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(k)fluoranthene	0.01	0.0001	0.0001	0.0001	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dibenz(a,h)anthracene	1.0	0.0046	0.0045	0.0043	0.0145	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000
Indeno(1,2,3-cd)pyrene	0.1	0.0005	0.0005	0.0004	0.0015	0.0018	0.0000	0.0000	0.0000	0.0000	0.0000
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**SB-1 (mg/kg)**	**SB-3 (mg/kg)**	**SB-4 (mg/kg)**	**SB-9 (mg/kg)**	**SB-12 (mg/kg)**					
The Residential Direct Exposure SCTL of 0.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure SCTL of 0.7 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Alternative SCTL Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

TABLE 9
EE SOIL BORING DIOXIN ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

Congener	TEF	SB-1 (3.5'-4.5')	Converted Results*	SB-3 (0.5'-2.0')	Converted Results*	SB-4 (0.5'-2.0')	Converted Results*	SB-9 (2.0'-4.0')	Converted Results*	SB-12 (6.0'-7.0')	Converted Results*
2,3,7,8-TCDD	1	3.5	3.5	0.25	0.25	1.4	1.4	0.91	0.91	0.98	0.98
1,2,3,7,8-PeCDD	1	12.00	12	0.21	0.205	3.1	3.1	0.33	0.325	2.70	2.7
1,2,3,4,7,8-HxCDD	0.1	5.50	0.55	0.25	0.0245	2.8	0.28	1.90	0.19	3.00	0.3
1,2,3,6,7,8-HxCDD	0.1	250.00	25	0.25	0.025	11	1.1	9.10	0.91	11.00	1.1
1,2,3,7,8,9-HxCDD	0.1	120.00	12	0.38	0.038	8	0.78	5.80	0.58	8.10	0.81
1,2,3,4,6,7,8-HpCDD	0.01	1200.00	12	3.80	0.038	280	2.8	240	2.4	260	2.6
OCDD	0.0001	6800.00	0.68	20.00	0.002	1900	0.19	1800	0.18	2100	0.21
2,3,7,8-TCDF	0.1	4.20	0.42	0.17	0.017	2.2	0.22	1.50	0.15	2.50	0.25
1,2,3,7,8-PeCDF	0.05	3.00	0.15	0.17	0.00825	0.94	0.047	0.32	0.016	0.22	0.011
2,3,4,7,8-PeCDF	0.5	9.50	4.75	0.09	0.0425	1.6	0.8	1.90	0.95	1.90	0.95
1,2,3,4,7,8-HxCDF	0.1	19.00	1.9	0.18	0.0175	1.40	0.14	0.81	0.081	0.82	0.082
1,2,3,6,7,8-HxCDF	0.1	5.90	0.59	0.17	0.0165	0.9	0.089	1.50	0.15	2.00	0.2
2,3,4,6,7,8-HxCDF	0.1	7.90	0.79	0.12	0.0115	1.1	0.11	1.30	0.13	1.10	0.11
1,2,3,7,8,9-HxCDF	0.1	2.70	0.27	0.13	0.013	0.31	0.031	0.17	0.0165	0.10	0.0095
1,2,3,4,6,7,8-HpCDF	0.01	110.00	1.1	0.80	0.008	11	0.11	10.00	0.1	8.00	0.08
1,2,3,4,7,8,9-HpCDF	0.01	15.00	0.15	0.16	0.0016	0.980	0.0098	0.17	0.0017	0.94	0.0094
OCDF	0.0001	210.00	0.021	0.33	0.000033	28	0.0028	23.00	0.0023	16.00	0.0016
Sum Total Concentration of Weighted Dioxin/Furan Congeners =			***75.87***		0.72		**11.21**		**7.09**		**10.40**

SCTL-R = 7 ng/kg
SCTL-C = 30 ng/kg
SCTL-L = 3,000 ng/kg

Notes:

All values given in nanograms per kilogram (ng/kg)
***** Compounds that were below laboratory method dectection limits were reported at 1/2 of the method detection limit concentration for assessment of the TEQ.
SCTL-R **=** Residential Soil Cleanup Target Level
SCTL-C **=** Commercial/Industrial Soil Cleanup Target Level
SCTL-L **=** Leachability Soil Cleanup Target Level
Bold = Analytical result exceeded the Residential SCTL
Bold **=** Analytical result exceeded the Commercial and/or Leachability SCTL

TABLE 10
TCLP ARSENIC & LEAD RESULTS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

		Parameter:	Lead (mg/kg)	TCLP-Lead (mg/L)
		SCTL-R	400	NA
		SCTL-C	1,400	NA
		TCLP-RL	NA	5.0
Soil Boring	**Date**	**Depth (Feet-BLS)**		
SB-4	3/25/2019	**0 - 0.5**	212	0.046 (U)
		2 - 4	***2,410***	0.29
SB-7	3/26/2019	**0.5 - 2**	***1,560***	0.12
		2 - 4	***3,090***	0.13
SB-12	3/26/2019	**6 - 7**	***4,510***	0.34
SB-32	4/8/2019	**0.5 - 2**	***5,820***	0.17
SB-34	4/8/2019	**2 - 4**	***7,650***	0.50
Test Excavation	**Date**	**Depth (Feet-BLS)**		
TE-1	3/12/2019	**1 - 2**	105	0.046 (U)
TE-4	3/12/2019	**2 - 4**	181	0.046 (U)
TE-9	3/18/2019	**2 - 4**	361	0.046 (U)
TE-13	3/13/2019	**2 - 4**	202	0.046 (U)
TE-14	3/18/2019	**0 - 2**	120	0.046 (U)

		Parameter:	Arsenic (mg/kg)	TCLP-Arsenic (mg/L)
		SCTL-R	2.1	NA
		SCTL-C	12	NA
		TCLP-RL	NA	5.0
Soil Boring	**Date**	**Depth (Feet-BLS)**		
SB-4	3/25/2019	**0 - 0.5**	***156***	0.071 (U)
SB-7	3/26/2019	**0.5 - 2**	***275***	0.15
SB-12	3/26/2019	**6 - 7**	***152***	0.071 (U)

Notes:

mg/kg = milligrams per kilograms
mg/L = milligrams per liter
Bold = Analytical result exceeded the Residential SCTL
***Bold* =** Analytical result exceeded the Commercial and/or Leachability SCTL
SCTL-R = Soil Cleanup Target Level Residential Exposure Limit
SCTL-C = Soil Cleanup Target Level Commercial/Industrial Exposure Limit
SCTL-L = Soil Cleanup Target Level Leachability Exposure Limit
TCLP-RL = Toxicity Characteristic Leaching Procedure Regulatory Level
NT **=** Sample not tested for indicated parameter
NA **=** Not Applicable
U = Results below the laboratory method detection limits
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
** = Direct exposure value based on acute toxicity considerations
*** = Leachability determined via SPLP analysis

TABLE 11
GROUNDWATER ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

		Sample Designation:	MW-1	MW-2		MW-3	MW-4	MW-5		MW-6	MW-7	MW-8	MW-9		MW-10	MW-11	MW-12
		Date Sampled:	3/26/2019	3/26/2019	4/8/2019	3/26/2019	3/26/2019	3/26/2019	4/8/2019	3/27/2019	3/27/2019	3/27/2019	3/26/2019	4/8/2019	4/9/2019	4/9/2019	4/9/2019
Parameter	**Groundwater Cleanup Target Levels [1]**	**Natural Attenuation Default Source Concentrations [1]**															
Total Metals by 6010 (ug/L)																	
Arsenic	10	100	7.1 (U)	**13.2**	**20.9**	7.4 (I)	7.1 (U)	7.1 (U)		7.1 (U)	7.1 (U)	7.1 (U)	7.1 (U)		9.5 (I)	7.1 (U)	7.1 (U)
Barium	2,000	20,000	46.5	21.9		21.8	61.7	187		13.3	174	88.3	95.1				
Lead	15	150	4.6 (U)	4.6 (U)		4.6 (U)	4.6 (U)	9.0 (I)		4.6 (U)	6.9 (I)	4.6 (U)	4.6 (U)		4.6 (U)	4.6 (U)	4.6 (U)
Aluminum	200	2,000															
Iron	300	3,000	**333**	**1,010**	**1,600**	**785**	**530**	***3,420***	**2,560**	87.6	**884**	**793**	***4,030***	**1,750**	**1,060**	**842**	**427**
Cadmium	5	50															
Chromium	100	1,000															
Silver	100	1,000															
Selenium	50	500															
Total Metals by 7470 (ug/L)																	
Mercury	2	20															
Organochlorine Pesticides by 8081 (µg/L)																	
Dieldrin	0.002	0.20	0.0019 (U)	0.0019 (U)		0.0019 (U)	0.0020 (U)	0.0019 (U)		0.0019 (U)	0.0019 (U)	0.0019 (U)	0.0019 (U)				
Endosulfan I	42	420	0.0049 (U)	0.0049 (U)		0.0049 (U)	0.0052 (U)	0.0049 (U)		0.0049 (U)	0.0049 (U)	0.0049 (U)	0.0049 (U)				
Heptachlor epoxide	*	***	0.052	0.052		0.053	0.055	0.088		0.0050 (U)	0.0050 (U)	0.0050 (U)	0.063				
Other Chlorinated Pesticides Tested	Varies Per Constituent		(U)	(U)		(U)	(U)	(U)		(U)	(U)	(U)	(U)				
Organophosphorus Pesticides by 8141 (µg/L)																	
Diazinon	6.3	63											0.377 (U)				
Disulfoton	0.3	3											0.277 (U)				
Phorate	1.4	14											0.282 (U)				
Other Chlorinated Pesticides Tested	Varies Per Constituent												(J and/or U)				
Chlorophenoxy Herbicides by 8151 (µg/L)																	
2,4-D	70	700											0.744 (U)				
Dalapon	200	2,000											1.04 (U)				
2,4-DB	56	560											0.775 (U)				
Dicamba	210	2,100											0.813 (U)				
Dichloroprop	35	350											0.778 (U)				
Dinoseb	7	70											0.795 (U)				
MCPA	3.5	35											**13.1 (U)**				
MCPP	7	70											**7.15 (J U)**				
2,4,5-T	70	700											0.843 (U)				
2,4,5-TP	50	500											0.845 (U)				
VOCs by 8260 (µg/L)																	
MTBE	20	200											0.58 (I)				
Benzene	1	100											0.30 (U)				
Toluene	40	400											0.33 (U)				
Ethylbenzene	30	300											0.30 (U)				
Total Xylenes	20	200											2.1 (U)				
Tetrachloroethene (PCE)	3	300											0.38 (U)				
Trichloroethene (TCE)	3	300											0.36 (U)				
Cis-1,2-Dichloroethene	70	700											0.27 (U)				
Trans-1,2-Dichloroethene	70	700											0.23 (U)				
Vinyl Chloride	1	100											0.39 (U)				
Isopropylbenzene (IPB)	0.8	8											0.30 (U)				
Acetone	6,300	63,000											14.2 (I)				
1,2,4-Trimethylbenzene	10	100											0.24 (U)				
1,3,5-Trimethylbenzene	10	100											0.24 (U)				
Other VOCs Tested	Varies Per Constituent												(U)				
PAHs by 8270 (µg/L)																	
Naphthalene	14	140											0.29 (U)				
1-Methyl Naphthalene	28	280											0.19 (U)				
2-Methyl Naphthalene	28	280											0.68 (U)				
Acenaphthene	20	200											0.040 (U)				
Acenaphthylene	210	2,100											0.030 (U)				
Anthracene	2,100	21,000											0.043 (U)				
Benzo(a)Anthracene	0.05	5											**0.055 (U)**				
Benzo(a)Pyrene	0.2	20											0.12 (U)				
Benzo(b)Fluoranthene	0.05	5											0.027 (U)				
Benzo(ghi)Perylene	210	2,100											0.15 (U)				
Benzo(k)Fluoranthene	0.5	50											0.16 (U)				
Chrysene	4.8	480											0.026 (U)				
Dibenz(a,h)Anthracene	0.005	0.5											**0.13 (U)**				
Fluoranthene	280	2,800											0.018 (U)				
Fluorene	280	2,800											0.088 (U)				
Indeno(123-cd)Pyrene	0.05	5											**0.12 (U)**				
Phenanthrene	210	2,100											0.16 (U)				
Pyrene	210	2,100											0.032 (U)				
TPH by FL-PRO (mg/L)																	
TPH, Total (C8-C40)	5,000	50,000											0.88 (U)				
Ammonia (as N) by 350.1 (mg/L)																	
Nitrogen	2.8	28				0.47	0.64	**3.0**					**9.3**				
Nitrates/Nitrites by 300.0 (mg/L)																	
Nitrate as N	10,000	100,000															
Nitrite as N	1,000	10,000															
Dioxins/Furans by 8290 (pg/L)																	
Dioxins/Furans, Total	30	3,000				3.44	3.68										

Notes:
[1] = Groundwater cleanup target levels as established in Chapter 62-777 of the Florida Administrative Code (F.A.C.).
* = As provided in Chapter 62-520, F.A.C.
*** = Groundwater criteria as provided in Chapter 62-520, F.A.C., multiplied by 100X.
µg/L = micrograms per liter
mg/L = milligrams per liter
pg/L = picograms per liter
VOCs = Volatile Organic Compounds
PAHs = Polynuclear Aromatic Hydrocarbons
TPH = Total Petroleum Hydrocarbon
Bold = Value exceeds GCTL
Bold = Value exceeds NADSC
(U) = Analytical resulted below the laboratory Method Detection Limit.
(I) = Analytical resulted between the laboratory Method Detection Limit and Practical Quantitation Limit.
(J) = Analytical resulted outside laboratory established criteria.
Shaded cell indicates parameter was not tested.

TABLE 11
GROUNDWATER ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125

			Sample Designation:	MW-31		MW-38		MW-39	MW-42	MW-44		SCS-MW-1		SCS-MW-2		GW-1
			Date Sampled:	3/4/2019	3/27/2019	3/26/2019	4/8/2019	3/4/2019	3/4/2019	3/4/2019	3/27/2019	3/4/2019	3/27/2019	3/4/2019	3/11/2019	3/26/2019
Parameter	**Groundwater Cleanup Target Levels [1]**	**Natural Attenuation Default Source Concentrations [1]**														
Total Metals by 6010 (ug/L)																
Arsenic	10	100	**92.0**	**85.2**	7.1 (U)		7.1 (U)	7.1 (U)	7.1 (U)		7.1 (U)		7.1 (U)		
Barium	2,000	20,000	16.6		75.3		11.5	20.8	51.2		41.4		23.0		
Lead	15	150	4.6 (U)		4.6 (U)		4.6 (U)	4.6 (U)	4.6 (U)		4.6 (U)		4.6 (U)		
Aluminum	200	2,000	30.7 (U)				30.7 (U)	30.7 (U)	30.7 (U)		30.7 (U)		30.7 (U)		
Iron	300	3,000	**2,820**	**2,430**	***3,830***	**2,000**	**369**	**621**	**766**	**795**	**1,350**	**2,950**	208		
Cadmium	5	50	0.33 (U)				0.33 (U)	0.33 (U)	0.33 (U)		0.33 (U)		0.33 (U)		
Chromium	100	1,000	1.7 (U)				1.7 (U)	1.7 (U)	1.7 (U)		1.7 (U)		1.7 (U)		
Silver	100	1,000	1.0 (U)				1.0 (U)	1.0 (U)	1.0 (U)		1.0 (U)		1.0 (U)		
Selenium	50	500	8.5 (U)				8.5 (U)	8.5 (U)	8.5 (U)		8.5 (U)		8.5 (U)		
Total Metals by 7470 (ug/L)															
Mercury	2	20	0.10 (U)				0.10 (U)	0.10 (U)	0.10 (U)		0.10 (U)		0.10 (U)		
Organochlorine Pesticides by 8081 (µg/L)															
Dieldrin	0.002	0.20	**0.0023 (I)**	0.0019 (U)	0.0019 (U)		0.0019 (U)	0.0019 (U)	0.0019 (U)	0.0019 (U)	**0.0032 (I)**	0.0019 (U)	0.0019 (U)		
Endosulfan I	42	420	0.0049 (U)	0.0049 (U)	0.0049 (U)		0.0049 (U)	0.0049 (U)	0.0049 (U)	0.0049 (U)	0.0049 (U)	0.0049 (U)	0.014		
Heptachlor epoxide	*	***	0.0050 (U)	0.0050 (U)	0.054		0.0050 (U)	0.0050 (U)	0.0050 (U)	0.0050 (U)	0.0050 (U)	0.0050 (U)	0.0050 (U)		
Other Chlorinated Pesticides Tested	Varies Per Constituent		(U)	(U)	(U)		(U)	(U)	(U)	(U)	(U)	(U)	(U)		
Organophosphorus Pesticides by 8141 (µg/L)															
Diazinon	6.3	63	0.377 (U)				0.377 (U)	0.377 (U)	0.377 (U)		0.377 (U)			0.377 (U)	
Disulfoton	0.3	3	0.277 (U)				0.277 (U)	0.277 (U)	0.277 (U)		0.277 (U)			0.277 (U)	
Phorate	1.4	14	0.282 (U)				0.282 (U)	0.282 (U)	0.282 (U)		0.282 (U)			0.282 (U)	
Other Chlorinated Pesticides Tested	Varies Per Constituent		(J and/or U)				(J and/or U)	(J and/or U)	(J and/or U)		(J and/or U)			(U)	
Chlorophenoxy Herbicides by 8151 (µg/L)															
2,4-D	70	700	0.744 (U)				0.744 (U)	0.744 (U)	0.744 (U)		0.744 (U)		0.744 (U)		
Dalapon	200	2,000	1.04 (U)				1.04 (U)	1.04 (U)	1.04 (U)		1.04 (U)		1.04 (U)		
2,4-DB	56	560	0.775 (U)				0.775 (U)	0.775 (U)	0.775 (U)		0.775 (U)		0.775 (U)		
Dicamba	210	2,100	0.813 (U)				0.813 (U)	0.813 (U)	0.813 (U)		0.813 (U)		0.813 (U)		
Dichloroprop	35	350	0.778 (U)				0.778 (U)	0.778 (U)	0.778 (U)		0.778 (U)		0.778 (U)		
Dinoseb	7	70	0.795 (U)				0.795 (U)	0.795 (U)	0.795 (U)		0.795 (U)		0.795 (U)		
MCPA	3.5	35	13.1 (J U)				13.1 (J U)	13.1 (J U)	13.1 (J U)		13.1 (J U)		13.1 (J U)		
MCPP	7	70	7.15 (U)				7.15 (U)	7.15 (U)	7.15 (U)		7.15 (U)		7.15 (U)		
2,4,5-T	70	700	0.843 (U)				0.843 (U)	0.843 (U)	0.843 (U)		0.843 (U)		0.843 (U)		
2,4,5-TP	50	500	0.845 (U)				0.845 (U)	0.845 (U)	0.845 (U)		0.845 (U)		0.845 (U)		
VOCs by 8260 (µg/L)															
MTBE	20	200	0.51 (U)				0.51 (U)	0.51 (U)	0.51 (U)		0.51 (U)		0.51 (U)		2.4
Benzene	1	100	0.30 (U)				0.30 (U)	0.30 (U)	0.30 (U)		0.30 (U)		0.30 (U)		0.30 (U)
Toluene	40	400	0.33 (U)				0.33 (U)	0.33 (U)	0.33 (U)		0.33 (U)		0.33 (U)		0.41 (I)
Ethylbenzene	30	300	0.30 (U)				0.30 (U)	0.30 (U)	0.30 (U)		0.30 (U)		0.30 (U)		0.30 (U)
Total Xylenes	20	200	2.1 (U)				2.1 (U)	2.1 (U)	2.1 (U)		2.1 (U)		2.1 (U)		2.1 (U)
Tetrachloroethene (PCE)	3	300	0.38 (U)				0.38 (U)	0.38 (U)	0.38 (U)		0.38 (U)		0.38 (U)		0.38 (U)
Trichloroethene (TCE)	3	300	0.36 (U)				0.36 (U)	0.36 (U)	0.36 (U)		0.36 (U)		0.36 (U)		0.36 (U)
Cis-1,2-Dichloroethene	70	700	0.27 (U)				0.27 (U)	0.27 (U)	0.27 (U)		0.27 (U)		0.27 (U)		0.27 (U)
Trans-1,2-Dichloroethene	70	700	0.23 (U)				0.23 (U)	0.23 (U)	0.23 (U)		0.23 (U)		0.23 (U)		0.23 (U)
Vinyl Chloride	1	100	0.39 (U)				0.39 (U)	0.39 (U)	0.39 (U)		0.39 (U)		0.39 (U)		0.39 (U)
Isopropylbenzene (IPB)	0.8	8	0.30 (U)				0.30 (U)	0.30 (U)	0.30 (U)		0.30 (U)		0.30 (U)		0.30 (U)
Acetone	6,300	63,000	5.3 (U)				5.3 (U)	5.3 (U)	5.4 (I)		5.3 (U)		5.3 (U)		6.9 (I)
1,2,4-Trimethylbenzene	10	100	0.24 (U)				0.24 (U)	0.24 (U)	0.24 (U)		0.24 (U)		0.24 (U)		0.24 (U)
1,3,5-Trimethylbenzene	10	100	0.24 (U)				0.24 (U)	0.24 (U)	0.24 (U)		0.24 (U)		0.24 (U)		0.24 (U)
Other VOCs Tested	Varies Per Constituent		(U)				(U)	(U)	(U)		(U)		(U)		(U)
PAHs by 8270 (µg/L)															
Naphthalene	14	140	0.29 (U)				0.29 (U)	0.29 (U)	0.29 (U)		0.29 (U)		0.29 (U)		0.29 (U)
1-Methyl Naphthalene	28	280	0.19 (U)				0.19 (U)	0.19 (U)	0.19 (U)		0.19 (U)		0.19 (U)		0.19 (U)
2-Methyl Naphthalene	28	280	0.68 (U)				0.68 (U)	0.68 (U)	0.68 (U)		0.68 (U)		0.68 (U)		0.68 (U)
Acenaphthene	20	200	0.040 (U)				0.040 (U)	0.040 (U)	0.040 (U)		0.040 (U)		0.040 (U)		0.040 (U)
Acenaphthylene	210	2,100	0.030 (U)				0.030 (U)	0.030 (U)	0.030 (U)		0.030 (U)		0.030 (U)		0.030 (U)
Anthracene	2,100	21,000	0.043 (U)				0.043 (U)	0.043 (U)	0.043 (U)		0.043 (U)		0.043 (U)		0.043 (U)
Benzo(a)Anthracene	0.05	5	**0.055 (U)**				**0.055 (U)**	**0.055 (U)**	**0.055 (U)**		**0.055 (U)**		**0.055 (U)**		**0.055 (U)**
Benzo(a)Pyrene	0.2	20	0.12 (U)				0.12 (U)	0.12 (U)	0.12 (U)		0.12 (U)		0.12 (U)		0.12 (U)
Benzo(b)Fluoranthene	0.05	5	0.027 (U)				0.027 (U)	0.027 (U)	0.027 (U)		0.027 (U)		0.027 (U)		0.027 (U)
Benzo(ghi)Perylene	210	2,100	0.15 (U)				0.15 (U)	0.15 (U)	0.15 (U)		0.15 (U)		0.15 (U)		0.15 (U)
Benzo(k)Fluoranthene	0.5	50	0.16 (U)				0.16 (U)	0.16 (U)	0.16 (U)		0.16 (U)		0.16 (U)		0.16 (U)
Chrysene	4.8	480	0.026 (U)				0.026 (U)	0.026 (U)	0.026 (U)		0.026 (U)		0.026 (U)		0.026 (U)
Dibenz(a,h)Anthracene	0.005	0.5	**0.13 (U)**				**0.13 (U)**	**0.13 (U)**	**0.13 (U)**		**0.13 (U)**		**0.13 (U)**		**0.13 (U)**
Fluoranthene	280	2,800	0.018 (U)				0.018 (U)	0.018 (U)	0.018 (U)		0.018 (U)		0.018 (U)		0.018 (U)
Fluorene	280	2,800	0.088 (U)				0.088 (U)	0.088 (U)	0.088 (U)		0.088 (U)		0.088 (U)		0.088 (U)
Indeno(123-cd)Pyrene	0.05	5	**0.12 (U)**				**0.12 (U)**	**0.12 (U)**	**0.12 (U)**		**0.12 (U)**		**0.12 (U)**		**0.12 (U)**
Phenanthrene	210	2,100	0.16 (U)				0.16 (U)	0.16 (U)	0.16 (U)		0.16 (U)		0.16 (U)		0.16 (U)
Pyrene	210	2,100	0.032 (U)				0.032 (U)	0.032 (U)	0.032 (U)		0.032 (U)		0.032 (U)		0.032 (U)
TPH by FL-PRO (mg/L)															
TPH, Total (C8-C40)	5,000	50,000	0.77 (U)				0.79 (U)	0.77 (U)	0.78 (U)		0.77 (U)		0.76 (U)		0.79 (U)
Ammonia (as N) by 350.1 (mg/L)															
Nitrogen	2.8	28	0.58				0.67	0.69	**3.5**		0.23		1.1		
Nitrates/Nitrites by 300.0 (mg/L)															
Nitrate as N	10,000	100,000	0.025 (U)				0.025 (U)	0.025 (U)	0.025 (U)		0.025 (U)		0.025 (U)		
Nitrite as N	1,000	10,000	0.025 (U)				0.025 (U)	0.025 (U)	0.025 (U)		0.025 (U)		0.025 (U)		
Dioxins/Furans by 8290 (pg/L)															
Dioxins/Furans, Total	30	3,000	2.87				2.84	3.71	3.32		2.89		3.65		

Notes:
[1] = Groundwater cleanup target levels as established in Chapter 62-777 of the Florida Administrative Code (F.A.C
* = As provided in Chapter 62-520, F.A.C.
*** = Groundwater criteria as provided in Chapter 62-520, F.A.C., multiplied by 100X.
µg/L = micrograms per liter
mg/L = milligrams per liter
pg/L = picograms per liter
VOCs = Volatile Organic Compounds
PAHs = Polynuclear Aromatic Hydrocarbons
TPH = Total Petroleum Hydrocarbon
Bold = Value exceeds GCTL
Bold = Value exceeds NADSC
(U) = Analytical resulted below the laboratory Method Detection Limit.
(I) = Analytical resulted between the laboratory Method Detection Limit and Practical Quantitation Limit.
(J) = Analytical resulted outside laboratory established criteria.
Shaded cell indicates parameter was not tested.

TABLE 12
GROUNDWATER DIOXIN-FURAN ANALYTICAL RESULTS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No: 2018-3057

		MW-3		MW-4		MW-31		MW-39		MW-42		MW-44		SCS-MW-1		SCS-MW-2	
	Date Sampled	3/26/2019		3/26/2019		3/4/2019		3/4/2019		3/4/2019		3/4/2019		3/4/2019		3/4/2019	
Compound	TEF	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ	Result	TEQ
2,3,7,8-TCDD	1	1.3 (U)	0.65	1.3 (U)	0.65	1.7 (U)	0.85	1.8 (U)	0.9	2.5 (U)	1.25	2.3 (U)	1.15	2.0 (U)	1.0	2.5 (U)	1.25
1,2,3,7,8-PeCDD	1	3.4 (U)	1.7	3.2 (U)	1.6	1.7 (U)	0.85	1.4 (U)	0.7	1.9 (U)	0.95	1.9 (U)	0.95	1.6 (U)	0.8	2.1 (U)	1.05
1,2,3,4,7,8-HxCDD	0.1	0.76 (U)	0.038	1.2 (U)	0.06	2.4 (U)	0.12	2.5 (U)	0.125	3.5 (U)	0.175	2.8 (U)	0.14	1.7 (U)	0.085	3.0 (U)	0.15
1,2,3,6,7,8-HxCDD	0.1	2.1 (U)	0.105	1.9 (U)	0.095	2.4 (U)	0.12	2.7 (U)	0.135	4.4 (U)	0.22	3.0 (U)	0.15	2.1 (U)	0.105	2.4 (U)	0.12
1,2,3,7,8,9-HxCDD	0.1	1.4 (U)	0.07	1.9 (U)	0.095	2.7 (U)	0.135	2.9 (U)	0.145	2.4 (U)	0.12	2.5 (U)	0.125	2.1 (U)	0.105	2.8 (U)	0.14
1,2,3,4,6,7,8-HpCDD	0.01	1.6	0.016	1.4 (U)	0.007	4.9 (U)	0.0245	3.1 (U)	0.0155	4.5 (U)	0.0225	3.6 (U)	0.018	3.7 (U)	0.0185	4.6 (U)	0.023
OCDD	0.0001	5.4	0.00054	8.2	0.00082	13 (U)	0.00065	12 (U)	0.0006	17 (U)	0.00085	13 (U)	0.00065	11 (U)	0.00055	12 (U)	0.0006
2,3,7,8-TCDF	0.1	0.91 (U)	0.0455	1.4 (U)	0.07	1.2 (U)	0.06	1.3 (U)	0.065	1.7 (U)	0.085	1.1 (U)	0.055	1.3 (U)	0.065	1.5 (U)	0.075
1,2,3,7,8-PeCDF	0.05	1.8 (U)	0.045	1.7 (U)	0.0425	1.7 (U)	0.0425	1.8 (U)	0.045	1.8 (U)	0.045	1.5 (U)	0.0375	1.4 (U)	0.035	1.8 (U)	0.045
2,3,4,7,8-PeCDF	0.5	1.5 (U)	0.375	1.7	0.85	1.2 (U)	0.3	0.89 (U)	0.2225	1.3 (U)	0.325	1.1 (U)	0.275	1.0 (U)	0.25	1.2 (U)	0.3
1,2,3,4,7,8-HxCDF	0.1	2.4	0.24	0.70 (U)	0.035	1.7 (U)	0.085	1.9 (U)	0.095	2.2 (U)	0.11	2.0 (U)	0.1	2.3 (U)	0.115	2.2 (U)	0.11
1,2,3,6,7,8-HxCDF	0.1	1.4 (U)	0.07	0.98 (U)	0.049	1.5 (U)	0.075	2.1 (U)	0.105	2.0 (U)	0.1	1.8 (U)	0.09	1.8 (U)	0.09	1.8 (U)	0.09
2,3,4,6,7,8-HxCDF	0.1	0.66 (U)	0.033	0.95 (U)	0.0475	1.2 (U)	0.06	2.1 (U)	0.105	2.0 (U)	0.1	1.6 (U)	0.08	1.5 (U)	0.075	2.0 (U)	0.1
1,2,3,7,8,9-HxCDF	0.1	0.53 (U)	0.0265	1.4 (U)	0.07	2.0 (U)	0.1	2.6 (U)	0.13	2.9 (U)	0.145	2.1 (U)	0.105	2.1 (U)	0.105	2.6 (U)	0.13
1,2,3,4,6,7,8-HpCDF	0.01	1.8 (U)	0.009	1.2 (U)	0.006	3.5 (U)	0.0175	3.6 (U)	0.018	5.2 (U)	0.026	3.5 (U)	0.0175	3.2 (U)	0.016	5.1 (U)	0.0255
1,2,3,4,7,8,9-HpCDF	0.01	2.4 (U)	0.012	1.4 (U)	0.007	6.6 (U)	0.033	6.1 (U)	0.0305	7.7 (U)	0.0385	5.6 (U)	0.028	5.1 (U)	0.0255	7.2 (U)	0.036
OCDF	0.0001	3.5 (U)	0.000175	3.0 (U)	0.00015	13 (U)	0.00065	11 (U)	0.00055	15 (U)	0.00075	11 (U)	0.00055	11 (U)	0.00055	14 (U)	0.0007
Total Concentration of Dioxin/Furan Congeners =			3.44		3.68		2.87		2.84		3.71		3.32		2.89		3.65

GCTL = 30
NADSC = 3,000

Notes:

All results reported in picograms per liter (pg/L)
Groundwater Cleanup Target Levels (GCTLs) Regulated Under Chapter 62-777, FAC.
* Compounds that were below laboratory method detection limits were reported as 1/2 of the method detection limit concentration for assessment of the TEQ.
TEF = Toxicity Equivalent Factor
TEQ = Toxicity Equivalent Quotient
GCTL = Groundwater Cleanup Target Level
NADSC = Natural Attenuation Default Source Concentration
U = Below Estimated Detection Limit

TABLE 13
WELL DETAIL AND GROUNDWATER ELEVATIONS
MELREESE GOLF COURSE
1802 NW 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT No.: 2018-3057

Well Number	SCS-MW-1		SCS-MW-2		MW-31		MW-38		MW-39		MW-42	
Well Depth	11.77		11.86		12.6		12.38		11.6		12.13	
Screen Interval	1.77 to 11.77		1.86 to 11.86		2.6 to 12.6		2.38 to 12.38		1.6 to 11.6		2.13 to 12.13	
TOC	-0.35		-0.3		-0.5		-0.37		-0.3		-0.15	
Date	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
03/04/19	4.15		3.92		4.08		NM		3.51		4.97	
03/26/19	NM		NM		NM		4.40		NM		NM	
03/27/19	4.00		NM		3.85		NM		NM		NM	
04/08/19	NM		NM		NM		3.71		NM		NM	
04/09/19	3.76		3.44		3.53		3.72		3.02		3.50	

Well Number	MW-44		MW-1		MW-2		MW-3		MW-4		MW-5	
Well Depth	11.88		13		14.69		12.87		12.89		13.05	
Screen Interval	1.88 to 11.88		3 to 13		4.69 to 14.69		2.87 to 12.87		2.89 to 12.89		3.05 to 13.05	
TOC	-0.2		-0.3		-0.28		-0.27		-0.29		-0.35	
Date	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
03/04/19	4.01		NM		NM		NM		NM		NM	
03/26/19	NM		4.70		6.66		4.58		4.46		4.50	
03/27/19	4.00		NM		NM		NM		NM		NM	
04/08/19	NM		NM		6.40		NM		NM		4.24	
04/09/19	4.53		4.12		6.40		4.25		4.23		4.22	

Well Number	MW-6		MW-7		MW-8		MW-9		MW-10		MW-11	
Well Depth	13.0		11.92		12.89		12.97		13.6		11.5	
Screen Interval	3 to 13		1.92 to 11.92		2.89 to 12.89		2.97 to 12.97		3.6 to 13.6		1.5 to 11.5	
TOC	-0.2		-0.2		-0.17		-0.27		-0.32		-0.19	
Date	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV	DTW	ELEV
03/04/19	NM		NM		NM		NM		NM		NM	
03/26/19	NM		NM		NM		4.07		NM		NM	
03/27/19	5.10		3.64		4.30		NM		NM		NM	
04/08/19	NM		NM		NM		3.73		NM		NM	
04/09/19	3.61		3.22		4.02		3.76		5.75		3.49	

Well Number	MW-12											
Well Depth	12.35											
Screen Interval	2.35 to 12.35											
TOC	-0.28											
Date	DTW	ELEV										
03/04/19	NM											
03/26/19	NM											
03/27/19	NM											
04/08/19	NM											
04/09/19	3.3											

Notes:

All measurements in feet unless otherwise noted
NM = Not Measured
DTW = Depth to water measurement
TOC = Top of well casing measurement
ELEV = Elevation = (Top of Casing - Static Depth to Water)

TABLE 14
VAPOR WELL OVA/FID FIELD SCREENING RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

VAPOR WELL DESIGNATION	SCREENED INTERVAL (FEET-BLS)	Date	PARTS PER MILLION (TOTAL)	PARTS PER MILLION (WITH CARBON FILTER)	PARTS PER MILLION (NET)
VW-1	1 - 3.5	4/2/2019	11.0	1.8	9.2
		4/9/2019	22.5	4.1	**18.4**
VW-2	2 - 5	4/2/2019	*198	NT	NT
		4/9/2019	*6,062 (O/R)	NT	NT
VW-3	1 - 3.5	4/2/2019	1.0	NF	1.0
		4/9/2019	<1	NF	<1
VW-4	1 - 3	4/2/2019	<1	NF	<1
		4/9/2019	<1	NF	<1
VW-5	1 - 3	4/2/2019	NT	NT	NT
		4/9/2019	27.3	2.0	**25.3**
VW-6	1 - 3	4/2/2019	<1	NF	<1
		4/9/2019	1.8	NF	1.8
VW-7	2 - 7	4/2/2019	*229	NT	NT
		4/9/2019	*956	NT	NT
VW-8	1 - 3	4/2/2019	<1	NF	<1
		4/9/2019	<1	NF	<1
VW-9	1 - 4	4/9/2019	599.8	448.7	**151.1**
VW-10	1 - 6	4/9/2019	*1,191	NT	NT
VW-11	1 - 3	4/9/2019	*1,075	NT	NT

Notes:

* = Last reading displayed before OVA/FID flame-out.
O/R = Over Range
NF = Not Charcoal Filtered
NT = Not Tested
Bold = Result above 10 parts per million action level

TABLE 15
VAPOR WELL GAS METER FIELD SCREENING RESULTS
MELREESE GOLF COURSE
1802 NORTHWEST 37TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA 33125
PROJECT NO.: 2018-3057

VAPOR WELL DESIGNATION	SCREENED INTERVAL (FEET-BLS)	Date	*LEL (%)	**CH_4 (%)	**O_2 (%)	*VOC (ppm)
VW-1	1 - 3.5	4/2/2019	0.0	0.1	13.7	0.2
		4/9/2019	0.0	0.0	19.0	1.0
VW-2	2 - 5	4/2/2019	>60 (H/A)	14.5	0.2	0.0
		4/9/2019	>100 (H/A)	14.3	0.0	0.3
VW-3	1 - 3.5	4/2/2019	2.0	0.2	13.7	0.3
		4/9/2019	0.0	0.0	11.5	0.4
VW-4	1 - 3	4/2/2019	0.0	0.2	17.2	0.0
		4/9/2019	0.0	0.0	13.0	0.6
VW-5	1 - 3	4/2/2019	4.0	0.3	20.3	0.0
		4/9/2019	0.0	0.0	19.8	0.4
VW-6	1 - 3	4/2/2019	0.0	0.1	15.6	0.0
		4/9/2019	0.0	0.0	16.7	1.5
VW-7	2 - 7	4/2/2019	>60 (H/A)	4.1	0.9	0.0
		4/9/2019	>100 (H/A)	4.1	0.5	0.4
VW-8	1 - 3	4/2/2019	0.0	0.2	1.3	0.0
		4/9/2019	0.0	0.0	2.2	1.8
VW-9	1 - 4	4/9/2019	0.0	0.0	20.1	0.7
VW-10	1 - 6	4/9/2019	>100 (H/A)	3.6	0.6	0.5
VW-11	1 - 3	4/9/2019	15.0	0.4	0.0	0.6

Notes:
LEL = Lower Explosive Limit
CH_4 = Methane
O_2 = Oxygen
VOC = Volatile Organic Compound
H/A = High Alarm
Equipment: *MultiRae Plus
**Landtec GEM

APPENDIX A

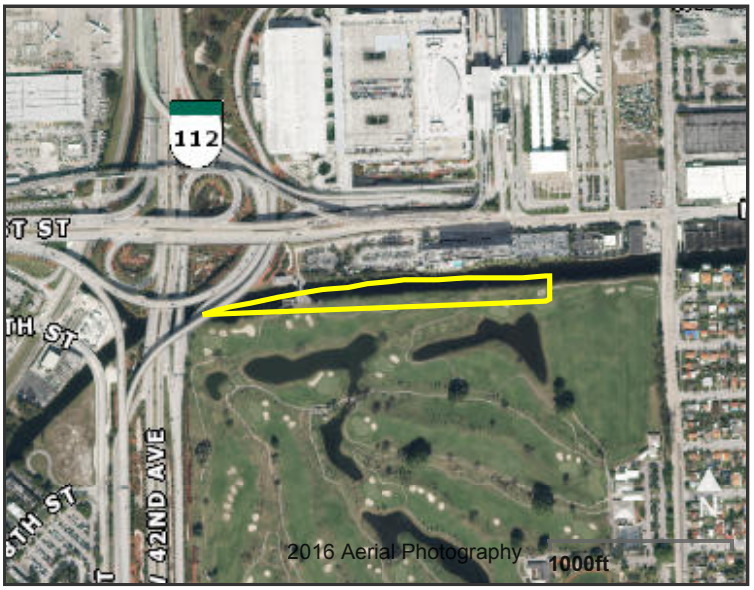
PROPETY APPRAISER INFORMATION

OFFICE OF THE PROPERTY APPRAISER

Summary Report

Generated On : 4/5/2019

Property Information	
Folio:	30-3129-000-0050
Property Address:	
Owner	CITY OF MIAMI-DEPT OF P&D ASSET MANAGEMENT DIVISION
Mailing Address	444 SW 2 AVE STE #325 MIAMI, FL 33130-1910
PA Primary Zone	7300 INDUSTRIAL - HEAVY MFG
Primary Land Use	8080 VACANT GOVERNMENTAL : VACANT LAND - GOVERNMENTAL
Beds / Baths / Half	0 / 0 / 0
Floors	0
Living Units	0
Actual Area	0 Sq.Ft
Living Area	0 Sq.Ft
Adjusted Area	0 Sq.Ft
Lot Size	217,800 Sq.Ft
Year Built	0



Assessment Information			
Year	2018	2017	2016
Land Value	$3,811,500	$3,811,500	$3,593,700
Building Value	$0	$0	$0
XF Value	$0	$0	$0
Market Value	$3,811,500	$3,811,500	$3,593,700
Assessed Value	$3,811,500	$3,811,500	$3,593,700

Taxable Value Information			
	2018	2017	2016
County			
Exemption Value	$3,811,500	$3,811,500	$3,593,700
Taxable Value	$0	$0	$0
School Board			
Exemption Value	$3,811,500	$3,811,500	$3,593,700
Taxable Value	$0	$0	$0
City			
Exemption Value	$0	$0	$0
Taxable Value	$0	$0	$0
Regional			
Exemption Value	$3,811,500	$3,811,500	$3,593,700
Taxable Value	$0	$0	$0

Benefits Information				
Benefit	Type	2018	2017	2016
Municipal	Exemption	$3,811,500	$3,811,500	$3,593,700

Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).

Sales Information			
Previous Sale	Price	OR Book-Page	Qualification Description

Short Legal Description
29 53 41 5 AC ALL THAT PART OF SE1/4 LYING S OF TAMIAMI CANAL & W OF SAL RY R/W LOT SIZE 217800 SQUARE FEET

Version:

OFFICE OF THE PROPERTY APPRAISER

Detailed Report

Generated On : 4/5/2019

Property Information	
Folio:	01-3132-000-0080
Property Address:	1400 NW 37 AVE Miami, FL 33125-1738
Owner	CITY OF MIAMI-DEPT OF P&D ASSET MANAGEMENT DIVISION
Mailing Address	444 SW 2 AVE STE #325 MIAMI, FL 33130-1910
PA Primary Zone	8002 PARKS & RECREATION
Primary Land Use	8940 MUNICIPAL : MUNICIPAL
Beds / Baths / Half	0 / 0 / 0
Floors	1
Living Units	0
Actual Area	7,789 Sq.Ft
Living Area	7,789 Sq.Ft
Adjusted Area	7,789 Sq.Ft
Lot Size	5,677,174.8 Sq.Ft
Year Built	Multiple (See Building Info.)

Assessment Information			
Year	2018	2017	2016
Land Value	$2,345,940	$2,345,940	$2,345,940
Building Value	$176,363	$177,716	$170,542
XF Value	$0	$0	$0
Market Value	$2,522,303	$2,523,656	$2,516,482
Assessed Value	$2,522,303	$2,523,656	$2,516,482

Benefits Information				
Benefit	Type	2018	2017	2016
Municipal	Exemption	$2,522,303	$2,523,656	$2,516,482

Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).

Taxable Value Information	2018	2017	2016
County			
Exemption Value	$2,522,303	$2,523,656	$2,516,482
Taxable Value	$0	$0	$0
School Board			
Exemption Value	$2,522,303	$2,523,656	$2,516,482
Taxable Value	$0	$0	$0
City			
Exemption Value	$2,522,303	$2,523,656	$2,516,482
Taxable Value	$0	$0	$0
Regional			
Exemption Value	$2,522,303	$2,523,656	$2,516,482
Taxable Value	$0	$0	$0

Version:

OFFICE OF THE PROPERTY APPRAISER

Detailed Report

Generated On : 4/5/2019

Property Information	
Folio:	01-3132-000-0090
Property Address:	1550 NW 37 AVE Miami, FL 33125-1740
Owner	CITY OF MIAMI-DEPT OF P&D ASSET MANAGEMENT DIVISION
Mailing Address	444 SW 2 AVE STE #325 MIAMI, FL 33130-1910
PA Primary Zone	8002 PARKS & RECREATION
Primary Land Use	8940 MUNICIPAL : MUNICIPAL
Beds / Baths / Half	0 / 0 / 0
Floors	1
Living Units	0
Actual Area	Sq.Ft
Living Area	Sq.Ft
Adjusted Area	39,726 Sq.Ft
Lot Size	2,109,175.2 Sq.Ft
Year Built	Multiple (See Building Info.)

Assessment Information			
Year	2018	2017	2016
Land Value	$871,560	$827,982	$827,982
Building Value	$3,133,825	$3,167,499	$3,048,737
XF Value	$1,825,256	$1,845,013	$1,864,772
Market Value	$5,830,641	$5,840,494	$5,741,491
Assessed Value	$5,830,641	$5,813,626	$5,285,115

Benefits Information				
Benefit	Type	2018	2017	2016
Non-Homestead Cap	Assessment Reduction		$26,868	$456,376
Municipal	Exemption	$5,830,641	$5,813,626	$5,285,115
Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).				

Taxable Value Information			
	2018	2017	2016
County			
Exemption Value	$5,830,641	$5,813,626	$5,285,115
Taxable Value	$0	$0	$0
School Board			
Exemption Value	$5,830,641	$5,840,494	$5,741,491
Taxable Value	$0	$0	$0
City			
Exemption Value	$5,830,641	$5,813,626	$5,285,115
Taxable Value	$0	$0	$0
Regional			
Exemption Value	$5,830,641	$5,813,626	$5,285,115
Taxable Value	$0	$0	$0

Version:

OFFICE OF THE PROPERTY APPRAISER

Summary Report

Generated On : 4/5/2019

Property Information	
Folio:	30-3129-000-0160
Property Address:	
Owner	CITY OF MIAMI-DEPT OF P&D ASSET MANAGEMENT DIVISION
Mailing Address	444 SW 2 AVE STE #325 MIAMI, FL 33130-1910
PA Primary Zone	8900 INTERIM-AWAIT SPECIFIC ZO
Primary Land Use	8080 VACANT GOVERNMENTAL : VACANT LAND - GOVERNMENTAL
Beds / Baths / Half	0 / 0 / 0
Floors	0
Living Units	0
Actual Area	0 Sq.Ft
Living Area	0 Sq.Ft
Adjusted Area	0 Sq.Ft
Lot Size	87,120 Sq.Ft
Year Built	0

Assessment Information			
Year	2018	2017	2016
Land Value	$871,200	$871,200	$871,200
Building Value	$0	$0	$0
XF Value	$0	$0	$0
Market Value	$871,200	$871,200	$871,200
Assessed Value	$871,200	$871,200	$871,200

Taxable Value Information			
	2018	2017	2016
County			
Exemption Value	$871,200	$871,200	$871,200
Taxable Value	$0	$0	$0
School Board			
Exemption Value	$871,200	$871,200	$871,200
Taxable Value	$0	$0	$0
City			
Exemption Value	$0	$0	$0
Taxable Value	$0	$0	$0
Regional			
Exemption Value	$871,200	$871,200	$871,200
Taxable Value	$0	$0	$0

Benefits Information				
Benefit	Type	2018	2017	2016
Municipal	Exemption	$871,200	$871,200	$871,200

Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).

Sales Information			
Previous Sale	Price	OR Book-Page	Qualification Description

Short Legal Description
29 53 41 2 AC THAT PART OF SE1/4 OF SE1/4 OF SE1/4 LYING S OF CENTER LINE OF TAMIAMI CANAL LOT SIZE 87120 SQUARE FEET

Version:

APPENDIX B

HISTORICAL & REGULATORY EXCERPTS

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982

miamidade.gov

March 20, 2019

CERTIFIED MAIL NO. 7014 1200 0002 0826 9220
RETURN RECEIPT REQUESTED

Emilio T. Gonzalez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 331300

Re: Response to March 5, 2018 DERM letter dated November 30, 2018 and Quarterly Groundwater Monitoring Report dated December 13, 2018 and prepared by E-Sciences for the Grapeland Heights Park (HWR-594/File-9442) located at, near, or in the vicinity of 1550 NW 37 Avenue, Miami, Miami-Dade County , Florida.

Dear Mr. Gonzalez:

The Department of Regulatory and Economic Resources-Division of Environmental Resources Management (DERM) has reviewed the above-referenced documents received December 3 and December 18, 2018, respectively. The following comments are provided:

1. Previous Engineering Control inspection reports for several of the other City of Miami Parks documented damage to the bonded rubber mulch (BRM), which provides the EC for portions of those sites. In some instances, the BRM layer is no longer present. Additionally, at several locations the BRM was compromised by growing tree roots. Based on these observation, DERM requires the City to re-evaluate the use of the BRM and to propose an alternate or modified EC for existing areas with BRM at the Grapeland Park; or to submit a modified EC Maintenance Plan which will ensure that the BRM can and will be adequately maintained. Please provide for a current inspection of the Areas 1-7 and Area 9 locations at Grapeland Park where BRM was previously installed. Additional corrective action will be required if this product has not been maintained in the approved installation condition.

   Furthermore and based on the above, DERM cannot accept the proposal for the use of BRM in the additional areas proposed in the report pending the requirements stipulated above being addressed and approved. Be advised that the previously proposed use of 1' of clean fill on top of a high visibility geotextile fabric is an acceptable option.

2. For any area beyond the property boundary where an engineering control is required or where the institutional control must extend, the receiving entity (i.e. Miami Dade Expressway Authority) must accept the condition of the property and the installation and maintenance of any required engineering control. The report indicates that the City of Miami has already been in contact with and has coordinated this effort and installation of the engineering control. Please provide the documentation and details of this agreement along with a timeline for implementation. Please note that the engineering control area extends to the off-site delineating soil borings, not just the small strip of open ground abutting the fence area. In addition, DERM is copying Claudio Diaferia with MDX who was notified of the pending issues pertaining to the NW 14 Street pending issues.

3. Provide details and photographs of the existing shrubs to determine if they will provide an adequate engineering control for a portion of the site.

4. Please provide an update to your Figure 4 proposed EC area so that it depicts the location and boundary of each type of engineering control being proposed. Please ensure that the report encompasses all of the remaining proposed or existing engineering controls (i.e. also extending to the off-site delineating borings to the south, etc.)

5. Complete one additional quarterly sampling event for groundwater. Upon receipt of the results, an evaluation can be made if groundwater sampling can be discontinued or the frequency reduced.

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, Florida Administrative Code (FAC), as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.

DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. Please include the DERM file number on all correspondence.

Therefore, within sixty (60) days of receipt of this letter, you are hereby required to submit to DERM for review the next report addressing the above comments.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

Any person aggrieved by any action or decision of the DERM Director may appeal said action or decision to the Environmental Quality Control Board (EQCB) by filing a written notice of appeal along with submittal of the applicable fee, to the Code Coordination and Public Hearings Section of DERM within fifteen (15) days of the date of the action or decision by DERM.

If you have any questions concerning the above, please contact Thomas Kux, P.G., (kuxt@miamidade.gov) of DERM at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring & Restoration Division

TK

pc: Nadia Locke, P.E., ESciences, nlocke@esciencesinc.com
Keith Ng, City of Miami, KeithNg@miamigov.com
Claudio Diaferia, MDX, CDiaferia@mdxway.com

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
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miamidade.gov

June 13, 2017

CERTIFIED MAIL NO. 7014 1200 0002 0826 2306
RETURN RECEIPT REQUESTED

Daniel J. Alfonso, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 331300

Re: Quarterly Sampling Report (QSR) dated March 20, 2017 and prepared by AECOM for the Grapeland Heights Park and Melreese Golf Course (HWR-594/AW-284/File-9442) located at, near, or in the vicinity of 1550 NW 37 Avenue, Miami, Miami-Dade County, Florida.

Dear Mr. Alfonso:

The Department of Regulatory and Economic Resources-Division of Environmental Resources Management (DERM) has reviewed the above-referenced document received April 11, 2017. The following comments are provided:

1. The groundwater monitoring program may be amended to only require sampling and analyzing MW-A, MW-B, MW-9R and the irrigation well for Arsenic.

2. As previously elected, the Melreese groundwater monitoring program has been discontinued as both the Melrese and Grapeland Park sites will be addressed under a single No Further Action with Conditions.

3. Be advised that the following reports are past due for this site:

    - The Interim Monthly Engineering Control Inspection Reports.
    - The report addressing the southern and off-site contamination impacts from the Grapeland Park site as required per the August 22, 2016 DERM letter.

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, Florida Administrative Code (FAC), as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.

DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. Please include the DERM file number on all correspondence.

Therefore, within ninety (90) days of receipt of this letter, you are hereby required to submit to DERM for review the next QSR and prepared in accordance with Chapter 24, Code of Miami-Dade County.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

Any person aggrieved by any action or decision of the DERM Director may appeal said action or decision to the Environmental Quality Control Board (EQCB) by filing a written notice of appeal along with submittal of the applicable fee, to the Code Coordination and Public Hearings Section of DERM within fifteen (15) days of the date of the action or decision by DERM.

If you have any questions concerning the above, please contact Thomas Kux, P.G., (kuxt@miamidade.gov) of DERM at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring & Restoration Division

TK

pc: Harry James, City of Miami, hjames@miamigov.com
Steve Starke, P.G., AECOM, Steve.Starke@aecom.com

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
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miamidade.gov

December 8, 2015

CERTIFIED MAIL NO. 7013 2630 0001 2416 1757
RETURN RECEIPT REQUESTED

Daniel J. Alfonso, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 331300

Re: Response to June 15, 2015 DERM Review Letter dated September 22, 2015 and updated on November 24, 2015 and prepared by SCS Engineers for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Alfonso:

The Department of Regulatory and Economic Resources- Division of Environmental Resources Management (DERM) has reviewed the above referenced reports, received October 16, 2015 and November 24, 2015, respectively.

The Engineering Control Plan is hereby approved. Therefore, implement the approved engineering control inspection and monitoring program and continue with the required groundwater monitoring plan.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please contact Thomas Kux, P.G., at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division

WM/tk
ec: Jeovanny Rodriguez, City of Miami, jeovannyrodriguez@miamigov.com
Eduardo Smith, P.E., SCS, ESmith@scsengineers.com

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
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miamidade.gov

May 31, 2016

CERTIFIED MAIL NO. 7013 2630 0001 2416 8800
RETURN RECEIPT REQUESTED

Daniel J. Alfonso, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Fifth Quarterly Groundwater Monitoring Report in Support of No Further Action with Conditions (NFAC) dated April 1, 2016 and prepared by SCS Engineers for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Alfonso:

The Department of Regulatory and Economic Resources- Division of Environmental Resources Management (DERM) has reviewed the above referenced report, April 4, 2016. The following comments are provided:

1. The Grapeland Park site and the Melreese Golf Course are both impacted with groundwater concentrations above applicable cleanup target levels (CTLs). Since both sites are abutting and are under the same ownership, please advise if you intend to obtain separate individual closures, each requiring separate deed restrictions for groundwater and soil impacts. Please note that part of the Grapeland Park site and Melreese Golf Course share the same folio in a North-South direction. Furthermore, if you intend to separate the sites, it will be necessary to establish the current east/west boundary condition. Therefore, obtain a current groundwater sample for arsenic from MW-33, MW-34, MW-35, and MW-36.

2. In response to the request to incorporate MW-31 into the Grapeland Park monitoring program, be advised that MW-32R to the north of MW-31 has already established the northern boundary of the plume. Based on the groundwater data provided, it does not appear that MW-31 will achieve levels below groundwater CTLs and will not be incorporated into the monitoring program as it is not a plume boundary well.

3. Please refer to the RBCA 7F Guidance document on the conditional closure process which may be found at the following website:
http://www.miamidade.gov/environment/pollution-remediation.asp

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, Florida Administrative Code (FAC), as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.

DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. Please include the DERM file number on all correspondence.

Therefore, within sixty (60) days upon receipt of this letter, submit to DERM the appropriate report addressing the above comments.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please contact Thomas Kux, P.G., at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division

WM/tk
ec: John Andersen – DERM
Jeovanny Rodriguez, City of Miami, jeovannyrodriguez@miamigov.com
Maria Giudici, P.G., SCS, MGiudici@scsengineers.com

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
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miamidade.gov

June 15, 2015

CERTIFIED MAIL NO. 7013 2630 0001 2419 5929
RETURN RECEIPT REQUESTED

Alice Bravo, Deputy City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Response to DERM May 30 and November 7, 2014 Review Letters dated March 26, 2015 and Second Quarterly Groundwater Monitoring Report dated June 9, 2015 and prepared by SCS Engineers for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Ms. Bravo:

The Department of Regulatory and Economic Resources- Division of Environmental Resources Management (DERM) has reviewed the above referenced reports, received March 30, 2015 and June 11, 2015, respectively, and offers the following comments in the same order as presented in the report:

1. DERM will accept the response provided that a Certified Golf Course Superintendent certifies that the required cover of 2 feet of clean fill is in place on all of the greens and shall include the date the fill was placed and that is was completed for all greens. Please note that the current response in the report is specific to only the SCS-14 location.

2. Based on an Inspection conducted by DERM on June 8, 2015, the engineering control in place for the sand traps is approved.

   Regarding the waste bunkers. Be advised that an approved engineering control is also required for these former areas unless it can be demonstrated that a sufficient cover of 1-foot of clean fill is present and subject to approval based on an inspection verifying the thickness. The grass cover alone is insufficient. You have the option of installing representative soil borings throughout each of the former waste bunkers to establish the depth to solid waste for determining the appropriate remedy, as applicable.

3. DERM acknowledges the use of standard mulch along with the proposed inspection frequency and daily replenishment in the tree areas.

4. DERM will accept a more focused and increased frequency of inspection for the areas identified as not having the minimum 1-foot of cover. However, the engineering control plan and report logs shall clearly identify the boundary of these areas as extending to the next soil boring in each direction that has the minimum of 1-foot of required clean fill cover. Any exposed solid waste shall be immediately removed and disposed. If frequent surface exposure of solid waste is noted during the inspections, DERM will require additional fill cover for these areas.

5. DERM acknowledges receipt of the groundwater sampling results. Continue with the approved groundwater sampling plan in accordance with the November 7, 2014 DERM approval. However, please include scaled site diagrams and also depicting the entire sampling area in future groundwater sampling reports. The site diagrams shall be consistent with those presented in Figure 4 of the Response to DERM Review Letters report.

6. DERM concurs with the proposal to submit a Site-Specific Work Plan to address sub-surface work on an as-needed basis throughout the golf course.

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the Standard Operating Procedures provided in Chapter 62-160, Florida Administrative Code (FAC), as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete resampling using two independent certified laboratories will be required.

DERM shall be notified in writing a minimum of three (3) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to DERMPCD@miamidade.gov. Please include the DERM file number on all correspondence.

Therefore, within sixty (60) days of receipt of this letter, you are hereby required to submit to DERM for review two copies of a supplemental report, one paper and one electronic PDF on CD, prepared in accordance with Section 24-44(2)(j)(iv), Code of Miami-Dade County, which shall address the above comments as applicable. A review fee of $675 shall be included with the submittal.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please contact Thomas Kux, P.G., at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division

WM/tk
ec: Jose Gonzalez, P.E. – DERM
Donna Gordon – DERM
Jeovanny Rodriguez, City of Miami, jeovannyrodriguez@miamigov.com
Eduardo Smith, P.E., SCS, ESmith@scsengineers.com

Environmental Consultants
and Contractors

7700 N. Kendall Drive
Suite 300
Miami, FL 33156

305 412-8185
FAX 305 412-8105
www.scsengineers.com

SCS ENGINEERS

April 1, 2016
File No. 09213010.65

Mr. Wilbur Mayorga, P.E., Chief
Department of Regulatory and Economic Resources
Division of Environmental Resources Management
701 Northwest 1st Court, 4th Floor
Miami, Florida 33136

Re: **Melreese Golf Course (AW-284/File-9442)**
1802 NW 37th Avenue
Miami, Florida

Subject: **Fifth Quarterly Groundwater Monitoring Report**

Dear Mr. Mayorga:

SCS Engineers (SCS), on behalf of the City of Miami (the City), submits this Fifth Quarterly Groundwater Monitoring Report (GMR) for the above referenced site (the Site) in response to the December 17, 2015 Department of Regulatory and Economic Resources, Division of Environmental Resource Management (DERM) correspondence (attached). Quarterly groundwater sampling activities are conducted in accordance with the DERM approved Monitoring Only Plan (MOP) dated November 7, 2014. A site location map is provided as **Figure 1**.

The December 17, 2015 DERM correspondence requested groundwater samples from monitoring wells MW-1 and MW-42 however based on the Fourth Quarter Groundwater Sampling Report submitted by SCS on December 2, 2015, MW-1 reported three consecutive quarters of arsenic concentrations below the Groundwater Cleanup Target Level (GCTL) so an additional sampling event did not appear warranted. However, it was recommended by SCS that an additional quarter of sampling be conducted for MW-31 and MW-42, which is described below.

GROUNDWATER QUALITY ASSESSMENT

GROUNDWATER ELEVATION

A Site Plan depicting onsite monitoring wells is included as **Figure 2.** On February 15, 2016, SCS recorded depth-to-water (DTW) measurements from onsite monitoring wells to determine groundwater elevation. Monitoring well construction details, top-of-casing (TOC) elevation data and depth to water measurements are summarized in **Table 1**. Groundwater elevations are provided on **Figure 3**.

SCS-MW1

COC	2/09/2015	5/11/2015	8/12/2015	11/12/2015
As	18	4.0 U	4.7 I	4.8 I
Pb	2.0 U	NS	NS	NS

MW-42

COC	8/03/2006	2/09/2015	5/11/2015	8/12/2015	9/1/2015	11/12/2015	02/15/2016
As	<5	4.4 I	4.0 U	52	15	10	9.5 I
Pb	<5	2.0 U	NS	NS	NS	NS	NS

MW-41

DATE	As
8/3/2006	<5

MW-44

COC	8/02/2006	2/09/2015	5/11/2015	8/12/2015	11/12/2015
As	<5	4.0 U	4.0 U	9.1 I	4.0 U
Pb	<5	2.0 U	NS	NS	NS

MW-43

DATE	As
8/2/2006	<5

MW-32

DATE	As
8/3/2006	<5

MW-32R

DATE	As
8/3/2006	<5
3/17/2009	<8.5 U
7/1/2009	1.3
7/30/2009	NS
10/9/2009	<36 U
4/19/2010	NS

MW-40

DATE	As
8/02/2006	6

MW-31

DATE	As	Pb
11/11/2005	76	NS
6/27/2006	32	NS
3/17/2009	360	NS
7/1/2009	100	NS
7/30/2009	180	NS
10/8/2009	280	NS
4/19/2010	NS	NS
2/9/2015	130	2.0 U
5/11/2015	130	NS
8/12/2015	150	NS
11/12/2015	180	NS
02/15/2016	140	NS

MW-B

DATE	As
4/22/2010	7.4
5/29/2015	5.0 U
8/21/2015	21.9
12/3/2015	5.2 I

MW-39

DATE	As
8/2/2006	<5

SCS-MW3

COC	2/11/2015	5/11/2015	8/12/2015	11/12/2015
As	4.6 I	4.0 U	4.0 U	4.0 U
Pb	2.0 U	NS	NS	NS

MW-30R

DATE	As
3/13/2009	<8.5 U
7/1/2009	27
7/30/2009	41
10/8/2009	49
4/19/2010	NS

MW-29/29R

DATE	As
7/11/2005	20
11/11/2005	40
3/13/2009	<8.5 U
7/1/2009	49
7/30/2009	50
10/8/2009	70
4/19/2010	51

MW-30

DATE	As
11/11/2005	40
6/29/2006	30

MW-A

DATE	As
4/19/2010	36
5/27/2010	39
5/29/2015	100
8/21/2015	80.2
12/3/2015	42.2

MW-38

DATE	As
8/3/2006	<5

MW-B

DATE	As
4/22/2010	7.4
5/29/2015	5.0 U
8/21/2015	21.9
12/3/2015	5.2 I

MW-9/9R

DATE	As
7/12/2005	19
10/6/2006	15
3/13/2009	<8.5 U
7/1/2009	55
7/30/2009	58
10/8/2009	92
4/19/2010	180
5/29/2015	93.8
8/21/2015	99.6
12/3/2015	101

MW-33

COC	8/03/2006	2/09/2015	5/11/2015	8/12/2015	11/12/2015
As	<5	9.0 I	4.0 U	4.7 I	4.0 U
Pb	<5	2.0 U	NS	NS	NS

SCS-MW2

COC	2/09/2015	5/11/2015	8/12/2015	11/12/2015
As	4.0 U	4.4 I	6.8 I	7.2 I
Pb	2.0 U	NS	NS	NS

MW-34

DATE	As
8/02/2006	8

MW-35

DATE	As
8/2/2006	13
8/15/2006	21

MW-37

DATE	As
8/02/2006	<5

MW-36

DATE	As
8/02/2006	<5

GHW-IP

DATE	As
10/22/2009	5.8
12/11/2009	6.4
4/19/2010	14
5/27/2010	4.7
5/29/2015	15.7
8/21/2015	12.1

MW-3/3R

DATE	As
7/13/2005	13
10/6/2006	<5
3/13/2009	<8.5 U
7/1/2009	3.4
7/30/2009	NS
10/8/2009	2.2
4/19/2009	NS
8/21/2015	6.6 I
12/3/2015	5.0 U

0 150 300
SCALE IN FEET

LEGEND

- MONITORING WELL LOCATION – NO APPARENT SOLID WASTE
- MONITORING WELL LOCATION WITH APPARENT SOLID WASTE AT OR BELOW 1' BGS
- ARSENIC CONCENTRATION CONTOUR
- DASHED WHERE INFERRED

TABLE

SAMPLE ID	
DATE	
As	µg/L
Pb	µg/L

GROUNDWATER CLEAN UP TARGET LEVELS (µg/L)

ANALYTE	CTL
As	10
Pb	15

NOTES

µg/L – micrograms per Liter
U – Analyte was not detected at the laboratory Method Detection Limit (MDL).
I – The reported value is between the MDL and the Laboratory Practical Quantitation Limit (PQL).
Bold – Indicates an exceedence of the Groundwater Cleanup Target Level (GCTL) promulgated in Chapter 62-780, F.A.C.
NS – Not Sampled
COC – Contaminant of Concern

REV	DATE	DESCRIPTION	CHK. BY

LICENSE NO.

SHEET TITLE: SUMMARY OF GROUNDWATER ANALYTICAL DATA

PROJECT TITLE: MELREESE GOLF COURSE
1802 NW 37th AVENUE
MIAMI, FL

CLIENT: CITY OF MIAMI

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
7200 N.W. 41st STREET, SUITE 300, MIAMI, FL 33166
PH: (305) 412-8185 FAX: (305) 412-8105
FL CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 01010.40
DWG. NO. 01010.40
DWN. BFE
CHK. CMR
QA/QC BFE
APP. BFE RFS

CADD FILE:

DATE: NOVEMBER 2015

SCALE: AS NOTED

DRAWING NO.
Fig. 4
SHEET 4 of 4

\\miami-fs01\miami\SMASTER\City of Miami\Melreese\DWG\QUARTERLY GW MONITORING\Figure 4 – Summary of Groundwater Analytical Data – (rev 1-19-16).dwg Mar 07, 2016 - 10:59am Layout Name: GW Analytical data By: 4065jed

TABLE 2
GROUNDWATER ANALYTICAL SUMMARY
MELREESE GOLF COURSE
(AW-284/FILE-9442)

Sample			
Sample Location/ Sample ID	Date Collected	Arsenic	Lead
		(µg/L)	(µg/L)
Groundwater Cleanup Target Levels		10	15
SCS-MW-1	9-Feb-15	**18**	2.0 U
	11-May-15	4.0 U	NS
	12-Aug-15	4.7 I	NS
	12-Nov-15	4.8 I	NS
SCS-MW-2	9-Feb-15	4.0 U	2.0 U
	11-May-15	4.4 I	NS
	12-Aug-15	6.8 I	NS
	12-Nov-15	7.2 I	NS
SCS-MW-3	11-Feb-15	4.6 I	2.0 U
	11-May-15	4.0 U	NS
	12-Aug-15	4.0 U	NS
	12-Nov-15	4.0 U	NS
MW-31	9-Feb-15	**130**	2.0 U
	11-May-15	**130**	NS
	12-Aug-15	**150**	NS
	12-Nov-15	**180**	NS
	15-Feb-16	**140**	NS
MW-33	9-Feb-15	9.0 I	2.0 U
	11-May-15	4.0 U	NS
	12-Aug-15	4.7 I	NS
	12-Nov-15	4.0 U	NS
MW-42	9-Feb-15	4.4 I	2.0 U
	11-May-15	4.0 U	NS
	12-Aug-15	**52**	NS
	1-Sep-15	**15**	NS
	12-Nov-15	10	NS
	15-Feb-16	9.5 I	NS
MW-44	9-Feb-15	4.0 U	2.0 U
	11-May-15	4.0 U	NS
	12-Aug-15	9.1 I	NS
	12-Nov-15	4.0 U	NS

Notes -
µg/L - micrograms per liter
GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.
U - Not detected at the laboratory method detection limit (MDL)
I - Estimated value, the reported value is between the MDL and the practical quantitaion limit (PQL)
Bold - Indicates an exceedance of the applicable GCTL
NS = Not Sampled

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982
miamidade.gov

October 2, 2013

CERTIFIED MAIL NO. 7011 0470 0002 4387 4512
RETURN RECEIPT REQUESTED

Alice Bravo, Assistant City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Melreese Golf Course site (AW-284/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Ms. Bravo:

Please be advised that the Department of Regulatory and Economic Resources- Division of Environmental Resources Management (DERM) conducted an inspection of this site on September 27, 2013. Based on the Inspection and past due environmental report, DERM is providing the following comments:

1. During the referenced inspection, a random visual survey was conducted of the golf course. Melted glass pieces were observed at the base of one of the Ficus trees. The location of the Ficus tree and the temporary remedy to address this matter was provided to you in an email on September 27, 2013. However, DERM acknowledges receipt of a September 30, 2013 email from City of Miami staff regarding this matter and this issue has been satisfactorily addressed.

2. As also discussed in the September 27, 2013 DERM email, City of Miami park staff were requested to conduct a full visual inspection of the golf course to identify any additional potential incinerator ash material (i.e. melted/fused glass, etc.) exposed at the surface. Please provide the results of this survey within seven (7) days upon receipt of this letter. Please notify DERM of any additional areas identified as a result of that survey.

3. DERM requires that a weekly inspection be conducted for the golf course to ensure that required surface cover remains intact. Schedules may require adjustments such as conducting immediate inspections following significant events (i.e. heavy storms, etc.). Please be advised that there shall be no digging, tree or landscape planting, or any subsurface disturbance activities at this site without prior review and approval from DERM. Notification shall be provided immediately to DERM of findings that require corrective action. Furthermore, monthly reports documenting the inspection results shall be provided to DERM in the interim.

4. In accordance with the February 21, 2007 Supplemental Site Assessment Report approval letter, DERM requires that a Remedial Action Plan (RAP)/Engineering Control Plan (ECP) be submitted to address the remaining issues for this site.

Therefore, unless otherwise noted above, within sixty (60) days of receipt of this letter, submit to this Department for review the required report addressing the above comments along with the applicable review fee.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division

WM/tk
Enclosures

ec: Lee Hefty – DERM
Donna Gordon - DERM

MIAMI-DADE COUNTY

Environmental Resources Management
Pollution Control Division
Pollution Remediation Section
33 SW 2nd Avenue • 7th Floor
Miami, Florida 33130-1540
T 305-372-6700 F 305-372-6729

miamidade.gov

February 21, 2007

CERTIFIED MAIL NO. 7006 0810 0000 7018 2950
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

RE: Supplemental Site Assessment Report (SSAR) dated September 14, 2006 and prepared by Petro Hydro, Inc. for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1802 NW 37th Ave, Miami, Miami-Dade County, Florida.

Dear Mr. Hernandez:

The Pollution Remediation Section of the Department of Environmental Resources Management (DERM) has reviewed the referenced submittal, received, January 8, 2007, and hereby approves the report.

Pursuant to the above, a Remedial Action Plan (RAP)/Engineering Control Plan (ECP) prepared in accordance with Chapter 24, Code of Miami-Dade County that proposes a course of action in order to successfully remediate/address the property is required.

However, DERM requires that a meeting be scheduled to discuss alternatives available for this site. You are required to contact Thomas Kux, P.G., at the number listed below within thirty (30) days upon receipt of this letter to schedule the referenced meeting.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions regarding this letter, please contact me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk

pc: Petro Hydro, 10450 NW 31 Terr., Miami, FL 33172

Memorandum

MIAMI-DADE COUNTY

Date: July 9, 2013

To: Donna Gordon, Chief
Enforcement Section, RER

From: Wilbur Mayorga, P.E., Chief
Environmental Monitoring & Restoration Division, RER

Subject: City of Miami Melrese Golf Course and Grapeland Park
HWR-594 AW-284 File-9442
Past Due Reports

The Environmental Monitoring and Restoration Division is referring the above two abutting sites to you for enforcement action. The City has not complied with submitting the required reports in accordance with Courtesy Letters issued on January 15, 2009, April 13, 2009, and January 5, 2010 and Extension Request issued on March 2, 2011 provided for this site.

Please contact Thomas Kux, P.G. at ext. 6520 if you have any questions.

WM/tk

MIAMI-DADE COUNTY

Carlos Alvarez, Mayor

Environmental Resources Management
Pollution Control Division
701 NW 1st Court • 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982

miamidade.gov

March 2, 2011

CERTIFIED MAIL NO. 7010 1870 0000 2691 3876
RETURN RECEIPT REQUESTED

Tony E. Crapp Jr., City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Extension Request dated February 22, 2011 for the Quarterly Monitoring Report at Grapeland Park and submitted by the City of Miami and past due environmental reports for the Melreese Golf Course site (AW-284/File-9442) and Grapeland Park site (HWR-594/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Crapp Jr.:

The Environmental Assessment Section (EAS) of the Department of Environmental Resources Management (DERM) has received your request for extension. DERM does not object to granting the sixty (60) day extension to submit the next quarterly groundwater sampling report as required in item 2 of the October 4, 2010 DERM letter. However, item number 1 of the referenced letter is past due and it is critical that the information be provided as soon as possible and without further delay.

In addition, be advised that there are additional past due environmental issues still pending for these sites as referenced in the attached DERM letters dated January 5, 2010, April 13, 2009, and January 15, 2009. To date, DERM has not received the required environmental reports for the above referenced sites.

Therefore in addition to the requirements of the October 4, 2010 DERM letter as discussed above, within thirty (30) days upon receipt of this letter, submit the Engineering Control Plan (implemented in July 2008) and outstanding items due for the Grapeland Park and the Remedial Action Plan (RAP) due for the Melreese Golf Course.

Failure to comply with the above may result in enforcement action for this site.

If you have any questions concerning the above, please contact me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk
Pc Harry James, City of Miami

MIAMI-DADE COUNTY

Carlos Alvarez, Mayor

Environmental Resources Management
Pollution Control Division
701 NW 1st Court • 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6729

miamidade.gov

January 5, 2010

CERTIFIED MAIL NO. 7007 2680 0000 0620 0783
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Past due environmental reports for the Melreese Golf Course site (AW-284/File-9442) and Grapeland Park site (HWR-594/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Hernandez:

The Environmental Assessment Section (EAS) of the Department of Environmental Resources Management (DERM) has not received the required environmental reports for the above referenced sites. These reports are past due as of May 13, 2009 (Melreese Golf Course) and July 31, 2009 (Grapeland Park).

Therefore, within thirty (30) days upon receipt of this letter, submit the Engineering Control Plan (implemented in July 2008) and outstanding items due for the Grapeland Park and the Remedial Action Plan (RAP) due for the Melreese Golf Course.

Failure to comply with the above may result in enforcement action for this site.

If you have any questions concerning the above, please contact me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk
Pc Glendon Hall, City of Miami (gphall@miamigov.com)

MIAMI-DADE COUNTY

Carlos Alvarez, Mayor

Environmental Resources Management
Pollution Control Division
701 NW 1st Court • 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6729

miamidade.gov

April 13, 2009

CERTIFIED MAIL NO. 7007 2680 0000 0710 9665
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Environmental reports for the Melreese Golf Course site (AW-284/File-9442) and Grapeland Park site (HWR-594/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Hernandez:

Please be advised that the Environmental Assessment Section (EAS) of the Department of Environmental Resources Management (DERM) has not received the required reports for the above referenced facilities. In accordance with the attached January 15, 2009 courtesy letter issued by DERM, the reports were to be submitted by February 14, 2009. To date, the required documents have not been submitted.

Be advised that the levels of groundwater and/or soil analytical results submitted for this site constitute violations of Chapter 24, Code of Miami-Dade County (the Code), specifically, Section 24-44, 24-27, 24-28, and 24-29 of the Code.

Based on the above, and pursuant to Sections 24-7(15), 24-7(26), and 24-44(2)(g) of the Code, you are hereby required to submit to this office for review, within thirty (30) days of receipt of this letter, the past due assessment and/or remedial reports required for these sites.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please contact me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk
Attach

MIAMI-DADE COUNTY

Carlos Alvarez, Mayor

Environmental Resources Management
Pollution Control Division
701 NW 1st Court • 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6729

miamidade.gov

January 15, 2009

CERTIFIED MAIL NO. 7007 2680 0000 0710 9337
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Environmental reports for the Melreese Golf Course site (AW-284/File-9442) and Grapeland Park site (HWR-594/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Mr. Hernandez:

Please be advised that the Environmental Assessment Section of the Department of Environmental Resources Management (DERM) has not received the required reports for the above referenced facilities. In accordance with the October 10, 2008 email form the City of Miami, the reports were to be submitted by December 9, 2008 for the Melreese Golf Course facility and by November 24, 2008 for the Grapeland Park facility.

Therefore, within thirty (30) days of receipt of this letter, submit to this Department for review the required documents along with the applicable review fees.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk
Attach

Environmental Consultants
and Contractors

7700 N. Kendall Drive
Suite 300
Miami, FL 33156

305 412-8185
Fax 305 412-8105
www.scsengineers.com

SCS ENGINEERS

April 16, 2014
SCS File No. 09213010.25

Mr. Wilbur Mayorga, P.E., Chief
Department of Regulatory and Economic Resources
Division of Environmental Resources Management
701 Northwest 1st Court, 4th Floor
Miami, Florida 33136-6982

Re: **Melreese Golf Course**
1802 Northwest 37th Avenue
Miami, Florida

Subject: **Corrective Action Plan**

SCS Engineers (SCS), on behalf of the City of Miami (City) and DeLucca Enterprises (DeLucca), herein submits this Corrective Action Plan (CAP) for Melreese Golf Course (site) to the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (DERM). Melreese is an active golf course that is owned by the City and operated by DeLucca. The corrective actions proposed herein are consistent with the remedies discussed with DERM during our February 20, 2014, meeting.

PREVIOUS INVESTIGATONS

Buried incinerator ash was discovered at the site during a 2005 Limited Phase II Soil Assessment. In response to the discovery, DERM issued a letter, dated December 20, 2005, requiring further delineation and remediation of three localized areas where ash had been reported in the upper six inches of soil. The three localized areas were addressed by source removal on May 8, 2008, and subsequent assessments were conducted to address the delineation requirements. A summary of the assessment findings is as follows:

- Buried solid waste (incinerator ash and/or glass and metal fragments) was encountered at various depths throughout the site and has been delineated to the south, east and west by soil borings. The site is bound to the north by the Tamiami Canal.

- Concentrations of the chemicals of concern [COCs, i.e., arsenic, barium, copper, lead, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs) and dioxins] in soil samples were generally below the applicable soil cleanup target levels (SCTLs). Arsenic was present throughout the site at concentrations that are generally consistent with levels found at other golf courses. The 95% upper confidence limit of the mean concentration of lead was calculated below the residential SCTL. Copper concentrations were below the residential SCTL, with the exception of one out of 21 samples tested. Total dioxins/furans were reported at concentrations ranging from 2.01 ng/kg to 22.6 ng/kg. The remaining COC concentrations were below the residential SCTLs or the laboratory detection limits.

0 140 280
SCALE IN FEET

LEGEND

- SOIL BORING FOR VISUAL DELINEATION CONDUCTED AUGUST 29 – SEPTEMBER 2, 2005
- SOIL BORING – NO APPARENT SOLID WASTE CONDUCTED AUGUST 29 – SEPTEMBER 2, 2005
- APPARENT SOLID WASTE ABOVE 1' BELOW GROUND SURFACE (BGS) CONDUCTED AUGUST 29 – SEPTEMBER 2, 2005
- APPARENT SOLID WASTE AT OR BELOW 1' BELOW GROUND SURFACE (BGS) CONDUCTED AUGUST 29 – SEPTEMBER 2, 2005
- SOURCE REMOVAL CONFIRMATION SIDEWALL SAMPLES APRIL 2008
- MONITORING WELL LOCATION – NO APPARENT SOLID WASTE
- MONITORING WELL LOCATION WITH APPARENT SOLID WASTE AT OR BELOW 1' BGS
- SCS SOIL BORING COLLECTED USING DIRECT PUSH FOR VISUAL DELINEATION, CONDUCTED ON MARCH 3, 2014, FEBRUARY 3 & 4, 2015, JULY 22, 2015. NOTE: SCS-16 THROUGH SCS-52 AND THE JULY 22, 2015 WERE TERMINATED AT 2' BGS.
- SCS SOIL BORING LOCATION WITH APPARENT SOLID WASTE WITHIN UPPER 1' OF SOIL
- SCS SOIL BORING LOCATION WITH NO APPARENT SOLID WASTE WITHIN UPPER 1' OF SOIL
- SOURCE REMOVAL AREA (INCLUDES SOIL REPRESENTED BY FORMER SBs-17, 26 & 50 AND MSBs-63 THROUGH 74)
- (X.X) DEPTH AT WHICH SOLID WASTE / ASH BEGINS
- (3) AREAS WHERE SOLID WASTE WAS DOCUMENTED IN THE UPPER 1' OF SOIL. THESE AREAS WARRANT GREATER SCRUTINY DURING THE ENGINEERING CONTROLS INSPECTION.

REV	DATE	DESCRIPTION	CHK. BY

LICENSE NO.

SHEET TITLE
SITE MAP WITH ASSESSMENT LOCATIONS

PROJECT TITLE
MELREESE GOLF COURSE
1802 NW 37th AVENUE
MIAMI, FL

CLIENT
CITY OF MIAMI

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
7700 N. KENDALL DRIVE, SUITE 300, MIAMI, FL 33156
PH. (305) 412-8185 FAX. (305) 412-8105
FL CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO.	DWN. BY:	Q/A RVW BY:
09213010.40	CMR	RS
DSN. BY:	CHK. BY:	APP. BY:
BO	BO	RS

CADD FILE:

DATE: SEPTEMBER 2015

SCALE: AS NOTED

DRAWING NO.
Fig. 2

SHEET 2 of 2

M:\ESMASTER\City of Miami\Melreese\DWG\Figure 2 - Site Map w Assessment Locations.dwg Sep 21, 2015 - 5:11pm Layout Name: FIG 3 By: 4010cmr

0 150 300
SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- 1 HOLES
- 1 TEE BOX AREA
- FAIRWAY DIRECTION
- 1 GREEN AREA
- AREAS WHERE SOLID WASTE WAS DOCUMENTED IN THE UPPER 1' OF SOIL. THESE AREAS WARRANT GREATER SCRUTINY DURING THE ENGINEERING CONTROLS INSPECTION.

REV	DATE	DESCRIPTION	CHK. BY

LICENSE NO.

SHEET TITLE: SPECIAL INSPECTION AREAS

PROJECT TITLE: MELREESE GOLF COURSE
1802 NW 37th AVENUE
MIAMI, FL

CLIENT: CITY OF MIAMI

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
7700 N. KENDALL DRIVE, SUITE 300, MIAMI, FL 33156
PH: (305) 412-8185 FAX: (305) 412-8105
FL CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJ. NO. 01210.40
DWN. BY: CMR
CHK. BY: BO
QA/QC BY: RWS
APP. BY: RS

CADD FILE:

DATE: AUGUST 2015

SCALE: AS NOTED

DRAWING NO.
Fig. 3
SHEET 1 of 2

M:\ESMASTER\City of Miami\Melreese\DWG\Figure 3 - Special Inspection Areas.dwg Aug 06, 2015 - 6:23pm Layout Name: Layout By: 3817cop

MIAMI-DADE COUNTY
Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982
miamidade.gov

May 30, 2014

CERTIFIED MAIL NO. 7013 2630 0001 2427 5808
RETURN RECEIPT REQUESTED

Alice Bravo, Assistant City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

Re: Corrective Action Plan dated April 16, 2014 and prepared by SCS ES Consultants for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1550/1802 NW 37 Avenue, Miami-Dade County, Florida.

Dear Ms. Bravo:

The Department of Regulatory and Economic Resources- Division of Environmental Resources Management (DERM) has reviewed the above referenced report, received April 17, 2014. The following comments are provided:

1. Provide documentation that each of the 18 greens, including practice greens, were constructed with the 2 feet of cover as depicted in Figure 3 of the report. Please note that the lithology from boring SCS-14 does not correlate with that depicted in Figure 3.

2. The proposed control for the sand traps is approved. However, identify each of the waste bunkers on the site diagram. Be advised that if waste bunkers receive routine play or access as do other areas of the golf course, the same controls proposed for the sand traps will also be necessary for the waste bunkers.

3. The proposed approach to mulch the landscaped tree areas is acceptable. DERM recommends that a bonded rubber mulch be used for increased durability.

4. During previous DERM inspections, considerable elevation changes were noted throughout the golf course, including lower elevations throughout the fairway play area. Furthermore, large distances between soil borings such as at location SCS-4 (several hundred feet between delineating borings) infer potential large areas of solid waste within the surface interval. Therefore, the proposal to not implement additional engineering controls for the fairways, tees, roughs, and approaches is not approved at this time pending further investigation. At a minimum, a plan to provide sufficient soil boring coverage shall be required. Furthermore, those areas with solid

waste in the upper 2-feet will be required to be addressed and the next report shall also include an engineering control proposal.

5. A current round of groundwater samples shall be required for lead and arsenic from all site monitoring wells.

6. Any redevelopment or sub-surface work will require review and approval from DERM. Furthermore, disposal manifest shall be provided to DERM for any solid waste material removed from the site.

7. Although a projected start date to implement some of the engineering controls is provided, a more detailed timeline is required for review and approval that shall include projected completion dates for individual areas.

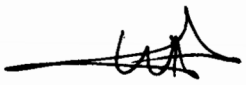
8. Inspection reports and engineering control maintenance records proposed in Appendix D shall be maintained on-site and available for review. Furthermore, Semi-annual maintenance reports shall be submitted to DERM that document the repair of any engineering controls established for the site.

Based on the above, an addendum to the Corrective Action Plan is required to be submitted within thirty (30) days upon receipt of this letter.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions concerning the above, please contact Thomas Kux, P.G., at (305) 372-6700.

Sincerely,



Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division

WM/tk
Enclosures

ec: Lee Hefty – DERM
Donna Gordon - DERM

MIAMI-DADE COUNTY

Environmental Resources Management
Pollution Control Division
Pollution Remediation Section
33 SW 2nd Avenue • 7th Floor
Miami, Florida 33130-1540
T 305-372-6700 F 305-372-6729

miamidade.gov

February 21, 2007

CERTIFIED MAIL NO. 7006 0810 0000 7018 2950
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

RE: Supplemental Site Assessment Report (SSAR) dated September 14, 2006 and prepared by Petro Hydro, Inc. for the Melreese Golf Course (AW-284/File-9442) located at, near, or in the vicinity of 1802 NW 37th Ave, Miami, Miami-Dade County, Florida.

Dear Mr. Hernandez:

The Pollution Remediation Section of the Department of Environmental Resources Management (DERM) has reviewed the referenced submittal, received, January 8, 2007, and hereby approves the report.

Pursuant to the above, a Remedial Action Plan (RAP)/Engineering Control Plan (ECP) prepared in accordance with Chapter 24, Code of Miami-Dade County that proposes a course of action in order to successfully remediate/address the property is required.

However, DERM requires that a meeting be scheduled to discuss alternatives available for this site. You are required to contact Thomas Kux, P.G., at the number listed below within thirty (30) days upon receipt of this letter to schedule the referenced meeting.

Failure to adhere to the items and timeframes stipulated above may result in enforcement action for this site.

If you have any questions regarding this letter, please contact me at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Pollution Control Division

WM/tk

pc: Petro Hydro, 10450 NW 31 Terr., Miami, FL 33172

TECHNICAL REPORT
TK
SSA

PETRO HYDRO, INC.

Environmental Engineering, General Contractors & Underground Utilities.
G.C. License #: CG-C051799

SUPPLEMENTAL SITE ASSESSMENT REPORT

Melreese Golf Course

Section 1 of 2

1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida 33125
DERM HWR-594/AW-284/File-9442

September 14, 2006

Prepared for:

City of Miami – Department of Economic Development
Miami Riverside Center
444 Southwest 2nd Avenue, 3rd Floor
Miami, Florida 33130

Submitted by:

Petro Hydro, Inc.
10450 NW 31st Terrace
Miami, Florida 33172
PHI Project #05E031.01

Prepared and Reviewed by:

Greg A. Mohr, P.G. – Fla. License No. PG1403
Environmental Division Manager
Date: 9-6-06

5.0 CONCLUSIONS

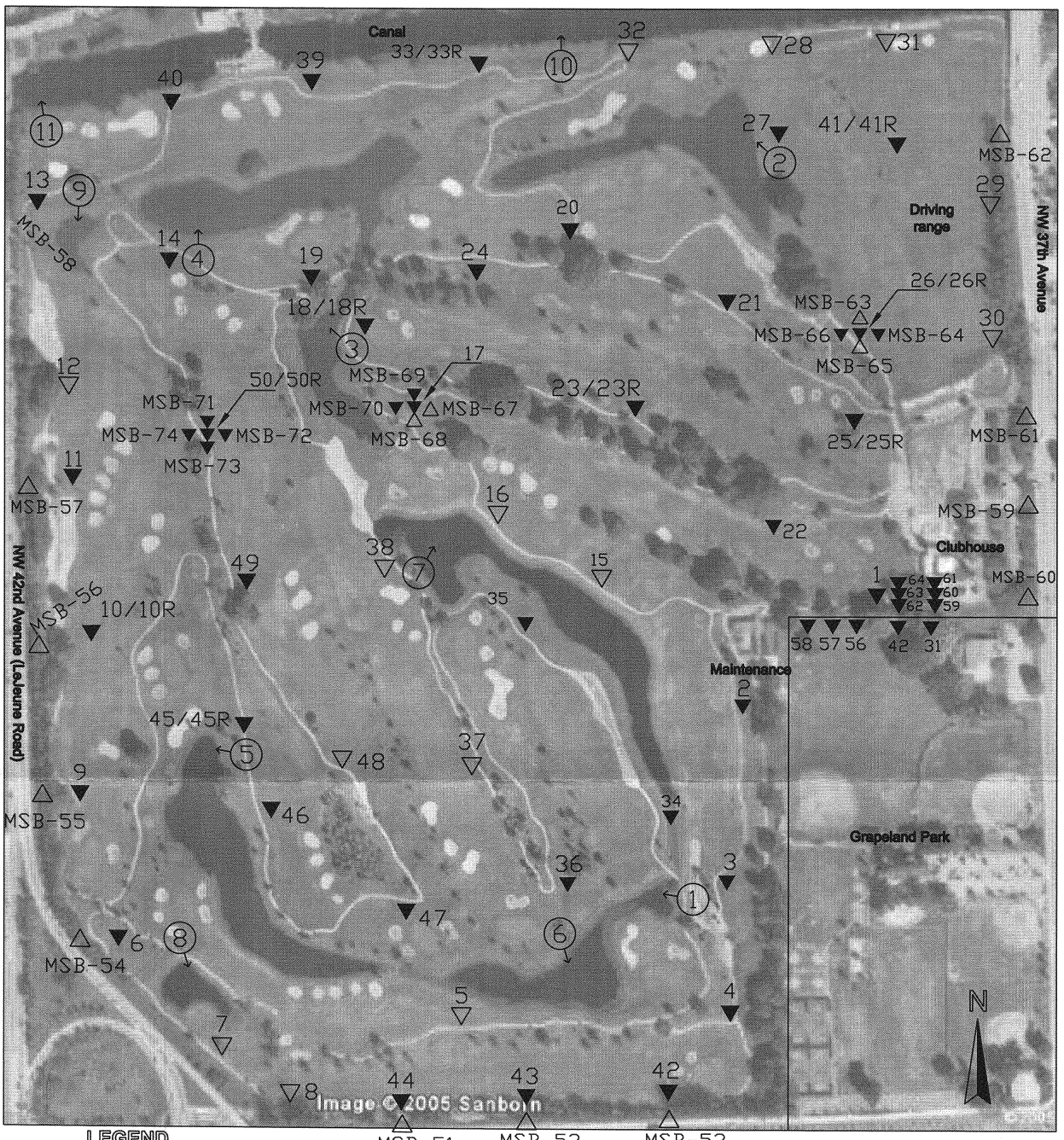
The conclusions provided below are based on the combined information obtained by PHI during implementation of the Limited Phase II Soil Assessment conducted in August 2005 and this Supplemental Site Assessment investigation. Based upon these investigations, indications are that the burial of the incinerator ash throughout the Site has only resulted in minimal Dioxin/Furans and Lead soil impacts only marginally above the MDC Chapter 24-11 Residential Exposure SCTLs. None of the detected Dioxin/Furans and Lead soil impacts exceeded the MDC Chapter 24-11 Commercial/Industrial Exposure SCTLs.

The limited soil Lead impacts detected above the MDC Chapter 24-11 Residential Exposure SCTLs were either delineated horizontally onsite along the property boundaries or vertically by the surface of the water table. Although TCLP Lead concentrations previously suggested the potential for leachate generation, groundwater data from 40 separate monitoring wells failed to detect any groundwater Lead concentrations in excess of the laboratory detection limit of 5 ug/L. Trace Dioxin/Furans groundwater concentrations were consistently detected; however the concentrations detected were significantly below the applicable GCTLs. The combined results of the soil and groundwater PCBs and PAHs analyses were consistently below acceptable laboratory detection limits, or MDC Chapter 24-11 Residential Exposure SCTLs or MDC Chapter 24-11 GCTLs.

Arsenic was consistently detected in the soils beneath the Melreese Golf Course, which has been in continuous operation for over 40 years. The detection of the elevated Arsenic concentrations is a common occurrence in Miami-Dade County golf courses and was the subject of a December 2002 DERM Technical Report entitled "Environmental Quality Monitoring at Five Municipal Golf Course in Miami-Dade". This technical report concluded that, based on DERM-sponsored sampling and analyses results, 94% of the surficial soil samples at the five golf courses exceeded the then applicable Residential MDC Chapter 24-11 SCTL of 0.7 mg/kg and that 87% of the soil samples exceeded the MDC Chapter 24-11 Commercial /Industrial SCTL of 3.7 mg/kg. The findings of the report further concluded that the golf course surficial soils contained a medial Arsenic concentration of 15.10 mg/kg and that all golf course soils contained a median Arsenic concentration of 5.6 mg/kg. Arsenic concentrations detected at the Melreese Golf Course are statistically similar to the DERM reported arsenic concentrations present at the five municipal golf courses in Miami Dade County

6.0 RECOMMENDATIONS

Based on the results of this assessment, PHI recommends the City/DERM work together to prepare and implement a No Further Action with Conditions (Conditional Closure) for this Site. A Conditional Closure is recommended for this Site to address the soil Dioxin/Furans and Lead concentrations detected in excess of the applicable MDC Chapter 24-11 Residential Exposure SCTLs. The elevated Arsenic concentrations would be representative of a secondary contaminant source since their presence is partially the result of agrochemicals that were applied over time after the burial of the incinerator ash and in accordance with then-applicable EPA guidelines. Since the City intends to maintain this property as a golf course in perpetuity, it is reasonable to consider scheduling a meeting with DERM to discuss the implications of this potential closure options.



LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

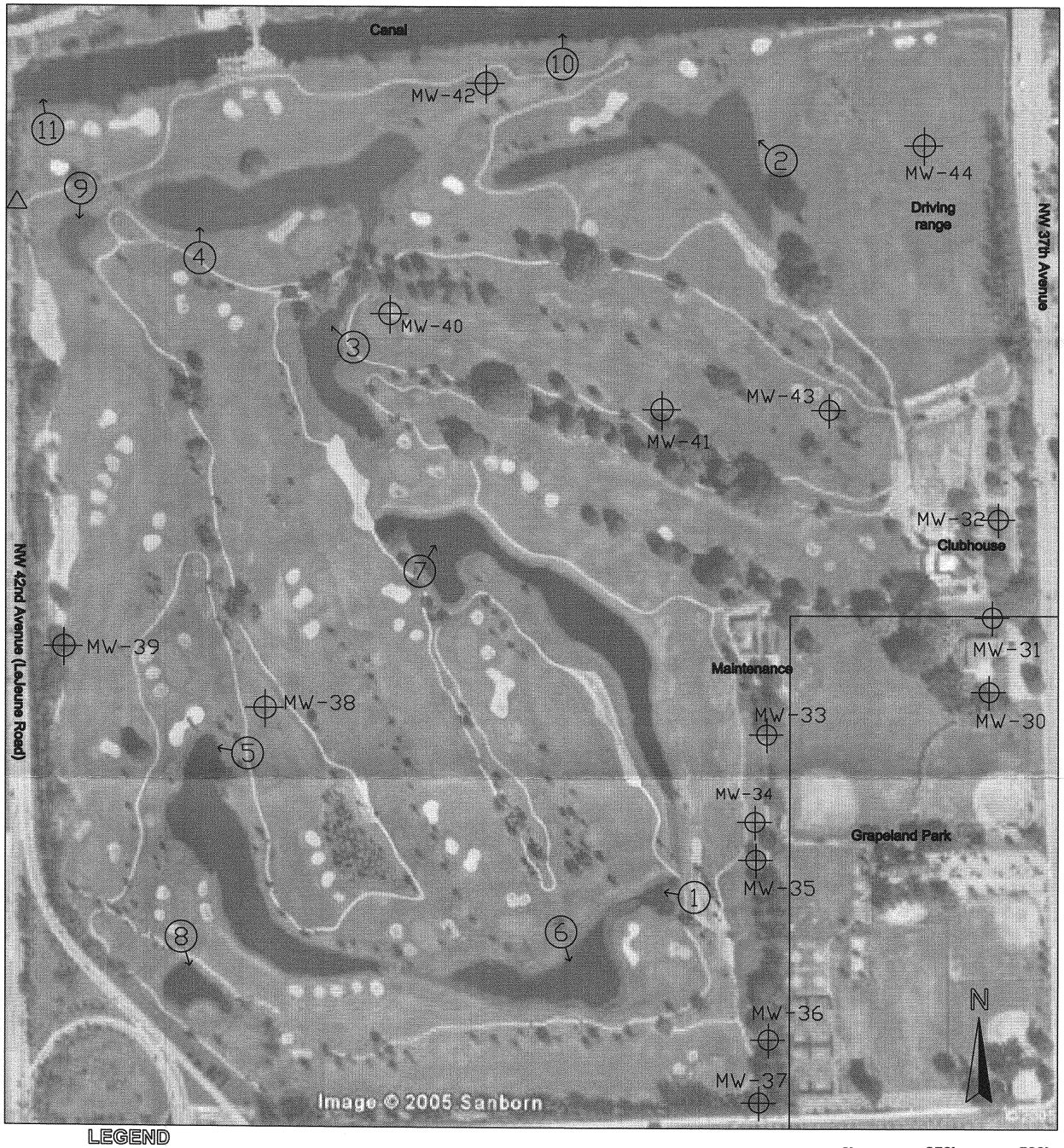
▽ No apparent incinerator ash

△ Soil boring for ash delineation

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

PETRO HYDRO, INC. 10450 NW 31 Terrace, Miami, Florida Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI MELREESE GOLF COURSE 1802 NW 37th Avenue Miami, Florida	FIGURE 2 SOIL BORING LOCATION MAP



LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

▽ No apparent incinerator ash

⊕ Monitoring well

0' 250' 500'

Scale in feet

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

PETRO HYDRO, INC. 10450 NW 31 Terrace, Miami, Florida Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI MELREESE GOLF COURSE 1802 NW 37th Avenue Miami, Florida	FIGURE 3 MONITORING WELL LOCATION MAP

LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

▽ No apparent incinerator ash

△ Soil boring for ash delineation

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

8/3/06	Sample Date
4.3	0.0'-0.5' Pb(mg/Kg)
4.3	0.5'-1.0' Pb(mg/Kg)
4.3	1.0'-3.0' Pb(mg/Kg)

ns - Not Sample

PETRO HYDRO, INC. 10450 NW 31 Terrace, Miami, Florida Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI MELREESE GOLF COURSE 1802 NW 37th Avenue Miami, Florida	FIGURE 4 SOIL LEAD IMPACT DELINEATION MAP

LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

▽ No apparent incinerator ash

△ Soil boring for ash delineation

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

Sample Interval	Arsenic	Barium	Copper	Lead
0.0-0.5	5.11	9.71	5.11	9.71
0.5-1.0	5.11	9.71	5.11	9.71
1.0-3.0	5.11	9.71	5.11	9.71

Sample Interval (Feet)
All concentrations (mg/Kg)

0' 250' 500'
Scale in feet

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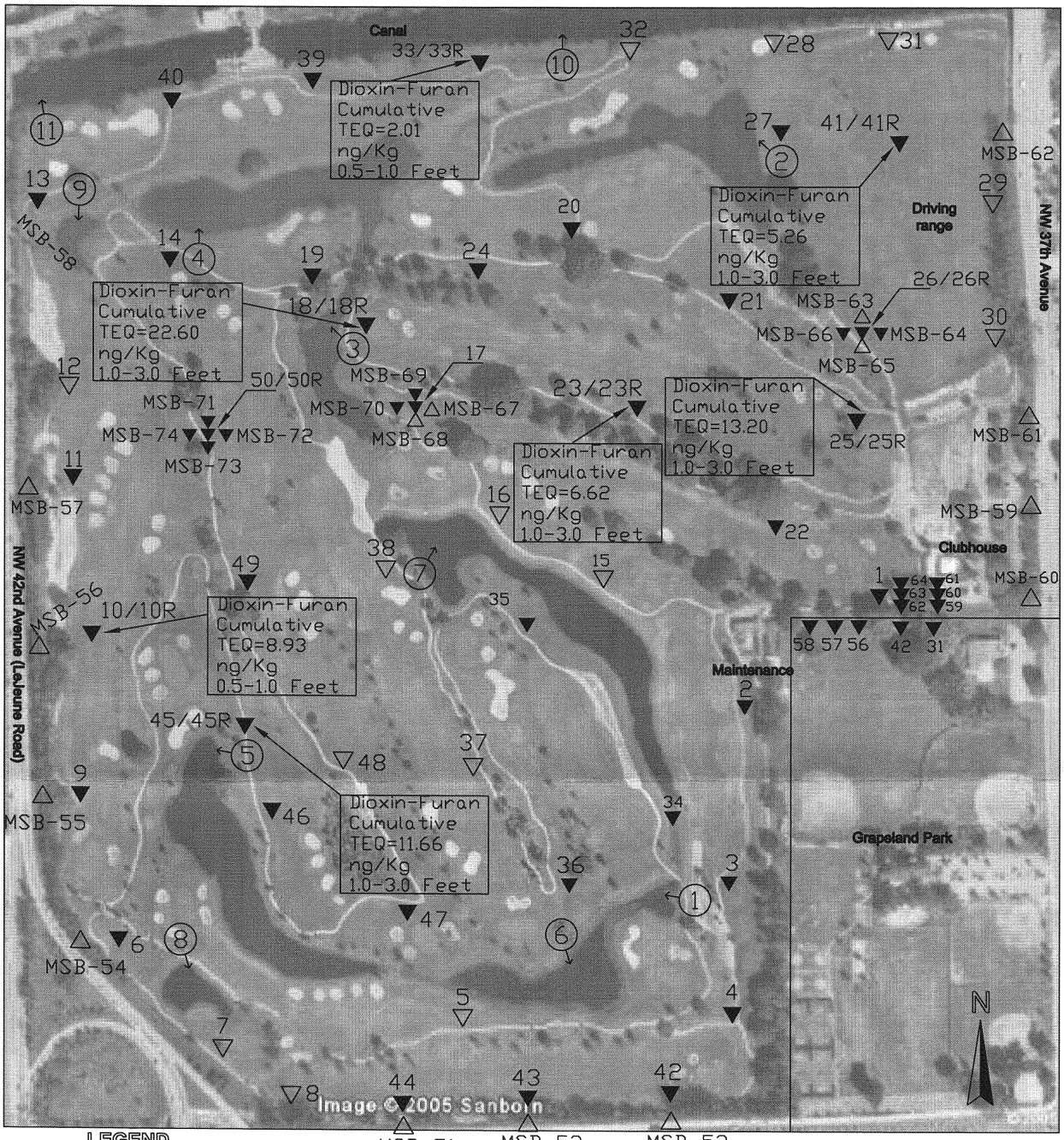
10450 NW 31 Terrace,
Miami, Florida
Phone: 305-477-0878
Fax: 305-594-8982

CITY OF MIAMI
MELREESE GOLF COURSE
1802 NW 37th Avenue
Miami, Florida

FIGURE 5

SOIL As, Ba, Cu, Pb
CONCENTRATION MAP



LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

▽ No apparent incinerator ash

△ Soil boring for ash delineation

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

Soil sampled for Dioxin/Furans on July, 2006
Boxes indicate Cumulative Toxicity Equivalent Quotient (TEQ) for dioxin and furans in soil (ng/Kg)
0.5'-1.0' Feet

PETRO HYDRO, INC. 10450 NW 31 Terrace, Miami, Florida Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI MELREESE GOLF COURSE 1802 NW 37th Avenue Miami, Florida	Figure 6 SOIL DIOXIN-FURANS CONCENTRATION MAP

TABLE 7
SOIL ANALYTICAL RESULTS - As & Pb (Page 1 of 6)

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442

Soil Boring Location & Date	Sample Interval (Feet, BG)	Percent Moisture	Lead mg/kg	TCLP Lead ug/L	Arsenic mg/kg	SPLP Arsenic ug/L
SB-1 8-29-05	0.0 - 0.5	35.0%	13.2	ns	8.09	ns
	0.5 - 1.0	13.6%	68.7	ns	3.62	ns
	1.0 - 3.0	13.3%	464	ns	4.94	ns
SB-2 8-29-05	0.0 - 0.5	23.6%	9.91	ns	4.42	ns
	0.5 - 1.0	17.9%	11.2	ns	1.77	ns
	1.0 - 3.0	1.53%	43.1	ns	1.53	ns
SB-3 8-29-05	0.0 - 0.5	12.6%	46.5	ns	37.9	15
	0.5 - 1.0	28.2%	51.0	ns	17.0	ns
	1.0 - 3.0	17.7%	71.5	ns	1.57	ns
SB-4 8-29-05	0.0 - 0.5	17.8%	62.5	ns	11.5	8
	0.5 - 1.0	13.3%	69.2	ns	7.38	ns
	1.0 - 3.0	23.6%	23.9	ns	6.33	ns
SB-5 8-29-05	0.0 - 0.5	26.1%	3.21	ns	5.13	ns
	0.5 - 1.0	20.5%	4.33	ns	2.73	ns
	1.0 - 3.0	7.99%	1.00	ns	0.554	ns
SB-6 8-29-05	0.0 - 0.5	41.5%	4.39	ns	13.6	ns
	0.5 - 1.0	30.9%	9.34	ns	4.22	ns
	1.0 - 3.0	15.6%	27.2	ns	21.9	ns
SB-7 8-29-05	0.0 - 0.5	36.2%	5.17	ns	2.32	ns
	0.5 - 1.0	27.4%	17.1	ns	2.95	ns
	1.0 - 3.0	17.7%	36.6	ns	6.32	ns
SB-8 8-29-05	0.0 - 0.5	37.4%	3.91	ns	2.38	ns
	0.5 - 1.0	9.10%	11.1	ns	2.48	ns
	1.0 - 3.0	32.7%	10.4	ns	2.33	ns
SB-9 8-29-05	0.0 - 0.5	31.7%	30.3	ns	32.5	ns
	0.5 - 1.0	15.9%	*130	ns	23.8	ns
	1.0 - 3.0	10.3%	12.2	ns	1.06	ns
SB-10 8-29-05	0.0 - 0.5	23.9%	1.43	ns	10.9	ns
	0.5 - 1.0	27.8%	*225	283	3.05	ns
	1.0 -3.0	11.6%	*135	ns	1.95	ns
MDC Chapter 24-11, Residential Exposure SCTLs (mg/kg)			400	NA	2.1	NA
MDC Chapter 24-11, Commercial/Industrial SCTLs (mg/kg)			1400	NA	12	NA
MDC Chapter 24-11 Groundwater Criteria (ug/L)			NA	15	NA	10

Note:
NS - Sample archived at laboratory but Not Submitted for analysis.
BDL - Below laboratory detection limit
NA - Not applicable

TABLE 7
SOIL ANALYTICAL RESULTS - As & Pb (Page 2 of 6)

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442

Soil Boring Location & Date	Sample Interval (Feet, BG)	Percent Moisture	Lead mg/kg	TCLP Lead ug/L	Arsenic mg/kg	SPLP Arsenic ug/L
SB-11 8-29-05	0.0 - 0.5	14.4%	42.0	ns	34.5	ns
	0.5 - 1.0	19.7%	51.3	ns	4.36	ns
	1.0 - 3.0	19.2%	61.9	ns	3.43	ns
SB-12 8-29-05	0.0 - 0.5	27.8%	*135	ns	4.55	ns
	0.5 - 1.0	18.8%	30.8	ns	1.37	ns
	1.0 - 3.0	13.9%	5.07	ns	1.32	ns
SB-13 8-29-05	0.0 - 0.5	12.6%	50.9	ns	27.1	17
	0.5 - 1.0	36.1%	*133	ns	10.9	ns
	1.0 - 3.0	40.3%	16.6	ns	2.93	ns
SB-14 8-29-05	0.0 - 0.5	37.9%	4.25	ns	4.26	ns
	0.5 - 1.0	31.6%	*129	ns	16.5	ns
	1.0 - 3.0	14.3%	61.9	ns	8.55	ns
SB-15 8-30-05	0.0 - 0.5	32.9%	14.5	ns	16.4	ns
	0.5 - 1.0	14.7%	15.9	ns	2.84	ns
	1.0 - 3.0	29.7%	86.3	ns	5.01	ns
SB-16 8-30-05	0.0 - 0.5	13.4%	5.98	ns	18.2	11
	0.5 - 1.0	16.2%	10.3	ns	2.81	ns
	1.0 - 3.0	23.8%	9.30	ns	1.93	ns
SB-17 8-30-05	0.0 - 0.5	35.1%	88.3	ns	8.29	ns
	0.5 - 1.0	27.7%	82.8	ns	11.6	ns
	1.0 - 3.0	28.2%	66.0	ns	4.99	ns
SB-18 8-30-05	0.0 - 0.5	21.6%	52.3	ns	23.5	ns
	0.5 - 1.0	31.6%	1070	219	15.3	ns
	1.0 - 3.0	14.7%	*106	124	2.58	ns
SB-19 8-30-05	0.0 - 0.5	29.7%	10.7	ns	11.2	ns
	0.5 - 1.0	16.6%	66.5	ns	4.78	ns
	1.0 - 3.0	48.4%	553	ns	7.62	ns
SB-20 8-30-05	0.0 - 0.5	28.9%	2.45	ns	1.15	ns
	0.5 - 1.0	18.2%	74.6	ns	5.37	ns
	1.0 -3.0	25.3%	1140	ns	12.0	ns
MDC Chapter 24-11, Residential Exposure SCTLs (mg/kg)			400	NA	2.1	NA
MDC Chapter 24-11, Commercial/Industrial SCTLs (mg/kg)			1400	NA	12	NA
MDC Chapter 24-11 Groundwater Criteria (ug/L)			NA	15	NA	10

Note:
NS - Sample archived at laboratory but Not Submitted for analysis.
BDL - Below laboratory detection limit
NA - Not applicable

TABLE 7
SOIL ANALYTICAL RESULTS - As & Pb (Page 3 of 6)

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442

Soil Boring Location & Date	Sample Interval (Feet, BG)	Percent Moisture	Lead mg/kg	TCLP Lead ug/L	Arsenic mg/kg	SPLP Arsenic ug/L
SB-21 8-30-05	0.0 - 0.5	30.1%	26.1	ns	12.0	ns
	0.5 - 1.0	28.3%	76.2	ns	4.51	ns
	1.0 - 3.0	25.9%	57.6	ns	2.58	ns
SB-22 8-30-05	0.0 - 0.5	18.4%	*144	ns	23.4	ns
	0.5 - 1.0	12.6%	*147	ns	8.21	ns
	1.0 - 3.0	19.6%	*386	268	7.11	ns
SB-23 8-30-05	0.0 - 0.5	22.3%	16.5	ns	14.1	ns
	0.5 - 1.0	23.2%	2.63	ns	4.92	ns
	1.0 - 3.0	9.65%	*344	115	4.45	ns
SB-24 8-30-05	0.0 - 0.5	22.9%	*190	ns	6.19	ns
	0.5 - 1.0	22.6%	78.2	ns	4.77	ns
	1.0 - 3.0	12.2%	64.4	ns	1.26	ns
SB-25 8-30-05	0.0 - 0.5	24.5%	*130	ns	5.23	ns
	0.5 - 1.0	20.0%	*155	158	8.18	ns
	1.0 - 3.0	30.7%	1270	104	8.22	ns
SB-26 8-30-05	0.0 - 0.5	11.5%	*186	ns	13.9	ns
	0.5 - 1.0	11.4%	*215	ns	7.29	ns
	1.0 - 3.0	15.4%	*144	ns	4.09	ns
SB-27 8-30-05	0.0 - 0.5	16.8%	8.52	ns	20.8	ns
	0.5 - 1.0	21.6%	48.1	ns	33.3	ns
	1.0 - 3.0	16.4%	33.2	ns	8.98	ns
SB-28 8-30-05	0.0 - 0.5	12.7%	15.6	ns	15.9	ns
	0.5 - 1.0	17.3%	40.6	ns	6.48	ns
	1.0 - 3.0	8.04%	*111	ns	1.87	ns
SB-29 8-31-05	0.0 - 0.5	18.1%	1.94	ns	10.6	ns
	0.5 - 1.0	17.3%	2.37	ns	2.85	ns
	1.0 - 3.0	17.6%	20.1	ns	3.90	ns
SB-30 8-31-05	0.0 - 0.5	13.0%	27.7	ns	16.7	ns
	0.5 - 1.0	8.24%	27.3	ns	9.84	ns
	1.0 -3.0	13.3%	12.0	ns	7.20	ns
MDC Chapter 24-11, Residential Exposure SCTLs (mg/kg)			400	NA	2.1	NA
MDC Chapter 24-11, Commercial/Industrial SCTLs (mg/kg)			1400	NA	12	NA
MDC Chapter 24-11 Groundwater Criteria (ug/L)			NA	15	NA	10

Note:
NS - Sample archived at laboratory but Not Submitted for analysis.
BDL - Below laboratory detection limit
NA - Not applicable

TABLE 7
SOIL ANALYTICAL RESULTS - As & Pb (Page 4 of 6)

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442

Soil Boring Location & Date	Sample Interval (Feet, BG)	Percent Moisture	Lead mg/kg	TCLP Lead ug/L	Arsenic mg/kg	SPLP Arsenic ug/L
SB-31 8-31-05	0.0 - 0.5	13.5%	62	ns	4.97	ns
	0.5 - 1.0	18.4%	53.0	ns	2.61	ns
	1.0 - 3.0	15.7%	*231	ns	5.32	ns
SB-32 8-31-05	0.0 - 0.5	28.7%	4.30	ns	8.72	ns
	0.5 - 1.0	19.2%	67.9	ns	3.81	ns
	1.0 - 3.0	11.4%	*186	ns	2.55	ns
SB-33 8-31-05	0.0 - 0.5	9.60%	2.98	ns	2.25	ns
	0.5 - 1.0	20.6%	21.2	ns	3.98	ns
	1.0 - 3.0	26.7%	647	ns	8.97	ns
SB-34 8-31-05	0.0 - 0.5	19.8%	20.6	ns	16.4	ns
	0.5 - 1.0	11.5%	51.2	ns	7.74	6
	1.0 - 3.0	13.7%	89.7	ns	4.22	ns
SB-35 8-31-05	0.0 - 0.5	31.1%	3.97	ns	3.63	ns
	0.5 - 1.0	21.3%	8.42	ns	3.99	ns
	1.0 - 3.0	11.9%	9.58	ns	1.37	ns
SB-36 8-31-05	0.0 - 0.5	21.2%	2.06	ns	4.75	ns
	0.5 - 1.0	21.4%	20.5	ns	14.4	ns
	1.0 - 3.0	21.6%	25.4	ns	11.9	ns
SB-37 8-31-05	0.0 - 0.5	27.1%	4.36	ns	17.0	ns
	0.5 - 1.0	25.4%	21.1	ns	9.79	ns
	1.0 - 3.0	11.2%	1.15	ns	0.732	ns
SB-38 8-31-05	0.0 - 0.5	19.0%	1.53	ns	21.5	ns
	0.5 - 1.0	10.9%	1.55	ns	9.84	ns
	1.0 - 3.0	16.1%	5.11	ns	3.51	ns
SB-39 9-1-05	0.0 - 0.5	19.6%	2.54	ns	3.63	ns
	0.5 - 1.0	29.3%	14.6	ns	4.20	ns
	1.0 - 3.0	21.4%	63.8	ns	7.65	ns
SB-40 9-1-05	0.0 - 0.5	29.1%	3.75	ns	10.7	ns
	0.5 - 1.0	21.2%	*155	ns	5.19	ns
	1.0 -3.0	47.2%	*102	ns	7.87	ns
MDC Chapter 24-11, Residential Exposure SCTLs (mg/kg)			400	NA	2.1	NA
MDC Chapter 24-11, Commercial/Industrial SCTLs (mg/kg)			1400	NA	12	NA
MDC Chapter 24-11 Groundwater Criteria (ug/L)			NA	15	NA	10

Note:
NS - Sample archived at laboratory but Not Submitted for analysis.
BDL - Below laboratory detection limit
NA - Not applicable

TABLE 7
SOIL ANALYTICAL RESULTS - As & Pb (Page 5 of 6)

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442

Soil Boring Location & Date	Sample Interval (Feet, BG)	Percent Moisture	Lead mg/kg	TCLP Lead ug/L	Arsenic mg/kg	SPLP Arsenic ug/L
SB-41 9-1-05	0.0 - 0.5	20.4%	6.29	ns	12.9	ns
	0.5 - 1.0	23.4%	*205	59	7.61	ns
	1.0 - 3.0	24.6%	414	136	6.01	ns
SB-42 9-1-05	0.0 - 0.5	44.7%	462	ns	11.7	ns
	0.5 - 1.0	16.2%	4.11	ns	5.01	ns
	1.0 - 3.0	18.9%	9.19	ns	2.32	ns
SB-43 9-1-05	0.0 - 0.5	34.7%	3.06	ns	8.72	ns
	0.5 - 1.0	16.4%	5.94	ns	2.73	ns
	1.0 - 3.0	21.4%	15.8	ns	8.62	ns
SB-44 9-1-05	0.0 - 0.5	29.6%	2.93	ns	27.4	ns
	0.5 - 1.0	12.8%	1.05	ns	5.72	ns
	1.0 - 3.0	13.2%	1.12	ns	0.645	ns
SB-45 9-1-05	0.0 - 0.5	27.4%	1.16	ns	11.6	ns
	0.5 - 1.0	26.2%	*226	ns	7.60	ns
	1.0 - 3.0	17.7%	714	754	7.32	ns
SB-46 9-1-05	0.0 - 0.5	24.7%	10.4	ns	3.74	ns
	0.5 - 1.0	19.6%	99.2	ns	13.3	ns
	1.0 - 3.0	17.6%	74.4	ns	2.55	ns
SB-47 9-1-05	0.0 - 0.5	20.1%	8.74	ns	17.3	ns
	0.5 - 1.0	12.0%	22.0	ns	5.80	7
	1.0 - 3.0	12.6%	2.32	ns	4.03	ns
SB-48 9-1-05	0.0 - 0.5	31.9%	20.0	ns	9.58	ns
	0.5 - 1.0	17.4%	76.6	ns	3.57	ns
	1.0 - 3.0	14.7%	0.879	ns	0.774	ns
SB-49 9-1-05	0.0 - 0.5	28.5%	*213	ns	13.7	ns
	0.5 - 1.0	30.3%	4.19	ns	6.66	5
	1.0 - 3.0	33.5%	*117	ns	2.50	ns
SB-50 9-1-05	0.0 - 0.5	32.7%	440	ns	23.9	ns
	0.5 - 1.0	23.6%	*227	ns	6.22	ns
	1.0 -3.0	24.2%	*249	ns	3.68	ns
MDC Chapter 24-11, Residential Exposure SCTLs (mg/kg)			400	NA	2.1	NA
MDC Chapter 24-11, Commercial/Industrial SCTLs (mg/kg)			1400	NA	12	NA
MDC Chapter 24-11 Groundwater Criteria (ug/L)			NA	15	NA	10

Note:
NS - Sample archived at laboratory but Not Submitted for analysis.
BDL - Below laboratory detection limit
NA - Not applicable

4.0 CONCLUSIONS

The conclusions provided below are based on information obtained by PHI during implementation of the Limited Phase II Soil Assessment and our experience at somewhat similar sites incinerator ash and agrochemical-applied Arsenic sites in Miami-Dade County. Since the utilization and contaminant history of no two sites are ever the same, PHI reserves the right to make corrections or revisions to our recommendations based upon the availability of new or additional information. Based upon this investigation, indications are that portions of the subject property appear to have been affected through two distinct site activities that have resulted in the detection of elevated levels of Arsenic and Lead.

Arsenic

Arsenic was detected in the soils beneath the Melreese Golf Course, which has been in continuous operation for over 40 years. The detection of the elevated Arsenic concentrations is a common occurrence in Miami-Dade County golf courses and was the technical subject of a December 2002 DERM Technical Report entitled "Environmental Quality Monitoring at Five Municipal Golf Course in Miami-Dade". This technical report concluded that, based on DERM-sponsored sampling and analyses results, 94% of the surficial soil samples at the five golf courses exceeded the Residential MDC Chapter 24-11 SCTL of 0.7 mg/kg and that 87% of the soil samples exceeded the MDC Chapter 24-11 Commercial /Industrial SCTL of 3.7 mg/kg. The findings of the report further concluded that the golf course surficial soils contained a medial Arsenic concentration of 15.10 mg/kg and that all golf course soils contained a median Arsenic concentration of 5.6 mg/kg. Arsenic concentrations detected at the Melreese Golf Course are statistically similar to the DERM reported arsenic concentrations present at the five municipal golf courses in Miami Dade county summarized by PHI in **Table 2, Appendix A.**

Quite simply the elevated Arsenic concentrations detected at this site are the result of over 40 years of continuous application of various EPA-approved Arsenic-containing agrochemicals. Since these agrochemicals were applied in accordance with then-applicable EPA guidelines, their presence should be no surprise; and based on MDC Chapter 24-11, Section 24-11.1(2)(E)(3) guidelines should not be the source of any future regulatory action. It should also be understood that the City of Miami has no intentions of converting this

PETRO HYDRO, INC.
Environmental Engineering, General Contractors & Underground Utilities.
G.C. License #: CG-C051799

TECHNICAL REPORT

TK
Phase 2

SURFACE WATER QUALITY REPORT

Melreese Golf Course

1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida 33125
DERM AW-284/File-9442
PHI Project #05E031

November 2, 2005

Prepared for:

City of Miami – Department of Economic Development
Miami Riverside Center
444 Southwest 2nd Avenue, 3rd Floor
Miami, Florida 33130

Submitted by:

Petro Hydro, Inc.
10450 NW 31st Terrace
Miami, Florida 33172
PHI Project #05E031

Prepared and Reviewed by:

Bahram Armakan, P.E. – Vice President
Fla. Reg. Engineer No. 51280
11/2/05

GREG A. MOHR
No. PG1403
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Greg A. Mohr, P.G. – Senior Project Manager
Fla. Lic. No. PG1403

LEGEND

Soil boring location (conducted August 29 - September 2, 2005)

▼ Apparent incinerator ash

▽ No apparent incinerator ash

Surface water sample location (conducted October 18, 2005)

← (8) Surface water sample (SW)

Sample Locations	
Arsenic (ug/L)	26
Lead (ug/L)	<5

0' 250' 500'

Scale in feet

PETRO HYDRO, INC. 10450 NW 31 Terrace, Miami, Florida Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI MELREESE GOLF COURSE 1802 NW 37th Avenue Miami, Florida	FIGURE 2 Surface Water Concentration Map

TABLE 1
SURFACE WATER ANALYTICAL RESULTS

Melreese Golf Course
1802 Northwest 37th Avenue
Miami, Miami-Dade County, Florida
DERM AW-284/File-9442
October 18, 2005

Surface Water Location	Sample Depth (below surface)	Arsenic (ug/L)	Lead (ug/L)
SW-1	6 - 12 Inches	**26**	<5
SW-2	6 - 12 Inches	**41**	<5
SW-3	6 - 12 Inches	**28**	<5
SW-4	6 - 12 Inches	**28**	<5
SW-5	6 - 12 Inches	**27**	<5
SW-6	6 - 12 Inches	**29**	<5
SW-7	6 - 12 Inches	**30**	<5
SW-8	6 - 12 Inches	**20**	<5
SW-9	6 - 12 Inches	**36**	<5
SW-10	6 - 12 Inches	<5	<5
SW-11	6 - 12 Inches	<5	<5
MDC Chapter 24-11 Groundwater Criteria (ug/L)		**10**	**15**
MDC Chapter 24-11 Freshwater Surface Water Criteria (ug/L)		**50**	***
MDC Chapter 24-11 Marine Surface Water Criteria (ug/L)		**50**	**8.5**

Note:

*** - Not to exceed 10% above ambient, as set forth in MDC Section 24-42(4).

Surface water samples collected in accordance with DEP-SOP-001/01 FS 21000 Surface Water Sampling procedures.

MIAMI-DADE COUNTY, FLORIDA

MIAMI-DADE

DERM

ENVIRONMENTAL RESOURCES MANAGEMENT
POLLUTION CONTROL DIVISION
33 S.W. 2nd AVENUE
SUITE 800
MIAMI, FLORIDA 33130-1540
(305) 372-6817

July 8, 2004
CERTIFIED MAIL NO. 7000 1670 0005 4645 3468
RETURN RECEIPT REQUESTED

Joe Arriola, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

RE: Site Assessment Report Addendum (SARA)/No Further Action Plan (NFAP) dated June 14, 2004 and prepared by URS Corporation for the Notice of Violation dated March 11, 2003 for the International Links of Miami facility (AW-284/File# 9442) located at, near, or in the vicinity of 1802 NW 37th Avenue, Miami, Miami-Dade County, Florida.

Dear Mr. Arriola:

The Pollution Remediation Section of the Department of Environmental Resources Management (DERM) has reviewed the analytical results received June 22, 2004, for the above-referenced site. Based on the information, no further remedial action is required by the Pollution Remediation Section at this time. This approval pertains only to that area of this site addressed in the above-referenced report and does not relieve responsibility for any other areas of this site that may be found to be contaminated. If subsequent evidence indicates that undiscovered contamination remains from a previous discharge or if a new discharge has occurred, then further action will be required to address the contamination.

You are required to properly abandon all monitoring wells, except compliance wells required by DERM for release detection, within 60 days of receipt of this letter. The monitoring wells must be abandoned in accordance with the requirements of Rule 62-532.500(4), Florida Administrative Code. Any monitoring wells remaining are the responsibility of the property owner(s) and must be equipped with tight-sealing, locking caps and maintained to prevent any direct discharge to the groundwater of Miami-Dade County.

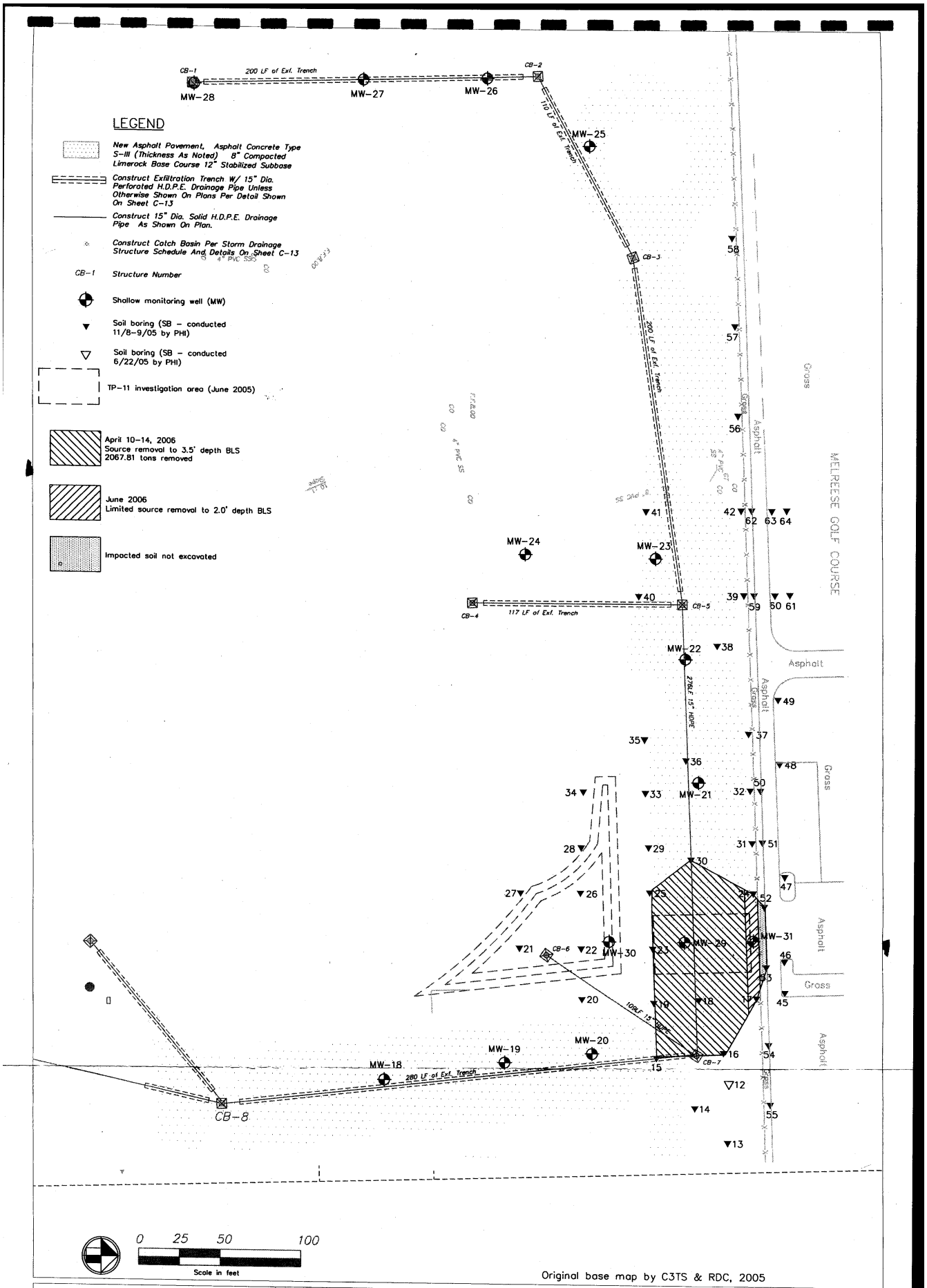
If you have any questions regarding this letter, please contact Rodolfo Rego of the Pollution Remediation Section at (305) 372-6700.

Sincerely,

for Wilbur Mayorga, P.E., Chief
Pollution Remediation Section

RR

pc: Alberto Ruder, Director, City of Miami Parks and Recreation Department, 444 SW 2nd Ave, 8th Floor, Miami, Florida 33130
Paula Sessions, P.G., URS Corp., 7650 Corporate Center Drive, Suite 401, Miami, FL 33126
Charles DeLucca, Bunkers of Miami, 1802 NW 37th Ave, Miami, FL 33125



Original base map by C3TS & RDC, 2005

PETRO HYDRO, INC. 10450 NW 31 Terrace Miami, Florida 33172 Phone: 305-477-0878 Fax: 305-594-8982	CITY OF MIAMI GRAPELAND HEIGHTS PARK 1550 NW 37 AVENUE, MIAMI, FLORIDA	SOURCE REMOVAL EXCAVATION MAP	FIGURE 4 Scale as shown Drawn by: ATE 11/28/05 Checked by: GAM 11/28/05

MIAMI-DADE COUNTY

Environmental Resources Management
Pollution Control Division
33 SW 2nd Avenue • 7th Floor
Miami, Florida 33130-1540
T 305-372-6700 F 305-372-6729

miamidade.gov

September 28, 2006

CERTIFIED MAIL NO. 7006 0810 0000 7057 2225
RETURN RECEIPT REQUESTED

Pedro Hernandez, City Manager
City of Miami
444 Southwest 2nd Avenue
Miami, Florida 33130

RE: Northern Arsenic Area Supplemental Site Assessment Report dated August 15, 2006; Soil Sampling and Analyses Plan-Western Tree Area dated August 24, 2006; and Source Removal Soil Waste Disposal Tracking Manifests document dated September 19, 2006 and prepared by Petro Hydro, Inc. for the Grapeland Heights Park (HWR-594/File-9442) located at, near, or in the vicinity of 1550 NW 37th Ave, Miami, Miami-Dade County, Florida.

Dear Mr. Hernandez:

The Pollution Remediation Section of the Department of Environmental Resources Management (DERM) has reviewed the referenced submittals, received August 16, August 25, and September 19, 2006, respectively, and hereby offers the following comments:

Northern (TP-11) Arsenic Area:

1. The arsenic groundwater plume has been adequately defined in this area. Be advised that, based on the conditional closure option elected for this site, a proposal for groundwater monitoring, at a minimum, will be required upon completion of the site assessment activities. Furthermore, monitoring wells that have been destroyed may require replacement upon the proposal for the groundwater remedy (i.e. groundwater monitoring).

   Be advised that DERM does not object to re-sampling the monitoring wells in this area to confirm the results prior to proposing a remedy (i.e. groundwater monitoring). However, if this is elected, monitoring well MW-29 shall be replaced and shall be sampled and analyzed for arsenic along with MW-30, MW-31, and MW-32.

2. There are no further requirements for arsenic in soil in this area.

Quarterly Groundwater Monitoring Report

Grapeland Park Assessment
1550 NW 37th Avenue
Miami, Florida
HWR-0594/File# 9442

December 13, 2018
E Sciences Project Number 7-0189-008

E Sciences

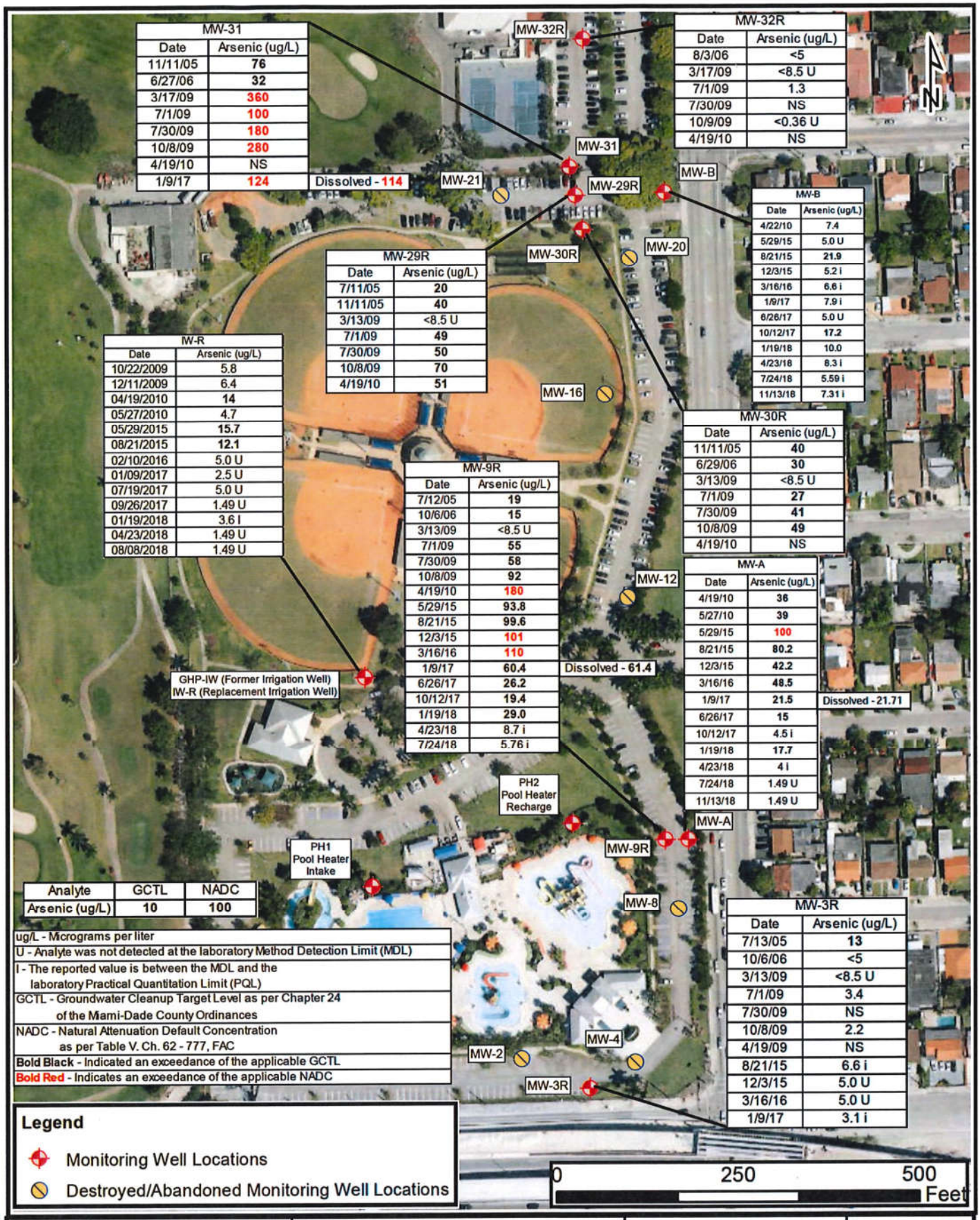
ENGINEERING
ENVIRONMENTAL
ECOLOGICAL

Prepared for:

City of Miami
444 SW 2nd Avenue, 8th Floor
Miami, Florida 33130

Submitted to:
Miami Dade County Department of Regulatory and Economic Resources
701 NW 1st Court, 4th Floor
Miami, Florida 33136

224 SE 9th Street • Fort Lauderdale, FL 33316 • Tel 954-484-8500 • Fax 954-484-5146 • www.esciencesinc.com



MW-31	
Date	Arsenic (ug/L)
11/11/05	76
6/27/06	32
3/17/09	360
7/1/09	100
7/30/09	180
10/8/09	280
4/19/10	NS
1/9/17	124

MW-32R	
Date	Arsenic (ug/L)
8/3/06	<5
3/17/09	<8.5 U
7/1/09	1.3
7/30/09	NS
10/9/09	<0.36 U
4/19/10	NS

MW-B	
Date	Arsenic (ug/L)
4/22/10	7.4
5/29/15	5.0 U
8/21/15	21.9
12/3/15	5.2 i
3/16/16	6.6 i
1/9/17	7.9 i
6/26/17	5.0 U
10/12/17	17.2
1/19/18	10.0
4/23/18	8.3 i
7/24/18	5.59 i
11/13/18	7.31 i

MW-29R	
Date	Arsenic (ug/L)
7/11/05	20
11/11/05	40
3/13/09	<8.5 U
7/1/09	49
7/30/09	50
10/8/09	70
4/19/10	51

IW-R	
Date	Arsenic (ug/L)
10/22/2009	5.8
12/11/2009	6.4
04/19/2010	14
05/27/2010	4.7
05/29/2015	15.7
08/21/2015	12.1
02/10/2016	5.0 U
01/09/2017	2.5 U
07/19/2017	5.0 U
09/26/2017	1.49 U
01/19/2018	3.6 I
04/23/2018	1.49 U
08/08/2018	1.49 U

MW-30R	
Date	Arsenic (ug/L)
11/11/05	40
6/29/06	30
3/13/09	<8.5 U
7/1/09	27
7/30/09	41
10/8/09	49
4/19/10	NS

MW-9R	
Date	Arsenic (ug/L)
7/12/05	19
10/6/06	15
3/13/09	<8.5 U
7/1/09	55
7/30/09	58
10/8/09	92
4/19/10	180
5/29/15	93.8
8/21/15	99.6
12/3/15	101
3/16/16	110
1/9/17	60.4
6/26/17	26.2
10/12/17	19.4
1/19/18	29.0
4/23/18	8.7 i
7/24/18	5.76 i

MW-A	
Date	Arsenic (ug/L)
4/19/10	36
5/27/10	39
5/29/15	100
8/21/15	80.2
12/3/15	42.2
3/16/16	48.5
1/9/17	21.5
6/26/17	15
10/12/17	4.5 i
1/19/18	17.7
4/23/18	4 i
7/24/18	1.49 U
11/13/18	1.49 U

MW-3R	
Date	Arsenic (ug/L)
7/13/05	13
10/6/06	<5
3/13/09	<8.5 U
7/1/09	3.4
7/30/09	NS
10/8/09	2.2
4/19/09	NS
8/21/15	6.6 i
12/3/15	5.0 U
3/16/16	5.0 U
1/9/17	3.1 i

Analyte	GCTL	NADC
Arsenic (ug/L)	10	100

ug/L - Micrograms per liter
U - Analyte was not detected at the laboratory Method Detection Limit (MDL)
I - The reported value is between the MDL and the laboratory Practical Quantitation Limit (PQL)
GCTL - Groundwater Cleanup Target Level as per Chapter 24 of the Miami-Dade County Ordinances
NADC - Natural Attenuation Default Concentration as per Table V. Ch. 62 - 777, FAC
Bold Black - Indicated an exceedance of the applicable GCTL
Bold Red - Indicates an exceedance of the applicable NADC

Legend

- Monitoring Well Locations
- Destroyed/Abandoned Monitoring Well Locations

E Sciences, Incorporated
FL Engineering Lic. #8691
224 SE 9th Street
Ft. Lauderdale, Florida 33316
www.esciencesinc.com
Phone: 954-484-8500
Fax: 954-484-5146

PROJECT NUMBER: 7-0189-008

Grapeland Park

Miami, Miami-Dade County, Florida

Groundwater Analytical Map

SCALE: 1 "=175 '

DATE: 11/29/2018

FIGURE 1

G:\Projects\7-0189-002\GIS

Table 1: Groundwater Analytical Summary
Grapeland Park
1550 NW 37th Avenue, Miami, Florida
HWR-0594/File#9442

Sample ID	Date	Arsenic (µg/L)
MW-A	04/19/2010	**36**
	05/27/2010	**39**
	05/29/2015	**100**
	08/21/2015	**80.2**
	12/03/2015	**42.2**
	03/16/2016	**48.5**
	01/09/2017	**21.7**
	06/26/2017	**15.0**
	10/12/2017	4.5 I
	01/19/2018	**17.7**
	04/23/2018	4 i
	07/24/2018	1.49 U
	11/13/2018	1.49 U
MW-B	04/22/2010	7.4
	05/29/2015	5.0 U
	08/21/2015	**21.9**
	12/03/2015	5.2 I
	03/16/2016	6.6 I
	01/09/2017	7.9 I
	06/26/2017	5.0 U
	10/12/2017	**17.2**
	01/19/2018	10.00
	04/23/2018	8.3 I
	07/24/2018	5.59 I
	11/13/2018	7.3i
MW-3R	07/13/2005	**13**
	10/06/2006	<5
	03/13/2009	<8.5 U
	07/01/2009	3.4
	07/30/2009	NS
	10/08/2009	2.2
	04/19/2010	NS
	08/21/2015	6.6 I
	12/03/2015	5.0 U
	03/16/2016	5.0 U
	01/09/2017	3.1 I

Table 1: Groundwater Analytical Summary
Grapeland Park
1550 NW 37th Avenue, Miami, Florida
HWR-0594/File#9442

Sample ID	Date	Arsenic (µg/L)
MW-9R	07/12/2005	**19**
	10/06/2006	**15**
	03/13/2009	<8.5 U
	07/01/2009	**55**
	07/30/2009	**58**
	10/08/2009	**92**
	04/19/2010	**180**
	05/29/2015	**93.8**
	08/21/2015	**99.6**
	12/03/2015	**101**
	03/16/2016	**110**
	01/09/2017	**61.4**
	06/26/2017	**26.2**
	10/12/2017	**19.4**
	01/19/2018	**29.0**
	04/23/2018	8.7 I
	07/24/2018	5.76 I
GHP-IW (Former Irrigation Well)	10/22/2009	5.8
	12/11/2009	6.4
	04/19/2010	14
	05/27/2010	4.7
	05/29/2015	**15.7**
	08/21/2015	**12.1**
IW-R (Replacement Irrigation Well)	02/10/2016	5.0 U
	01/09/2017	2.5 U
	07/19/2017	5.0 U
	09/26/2017	1.49 U
	01/19/2018	3.6 I
	04/23/2018	1.49 U
	08/08/2018	1.49U
MW-29R	07/11/2005	**20**
	11/11/2005	**40**
	03/13/2009	<8.5 U
	07/01/2009	**49**
	07/30/2009	**50**
	10/08/2009	**70**
	04/19/2010	**51**
MW-30R	11/11/2005	**40**
	06/29/2006	**30**
	03/13/2009	<8.5 U
	07/01/2009	**27**
	07/30/2009	**41**
	10/08/2009	**49**
	04/19/2010	NS

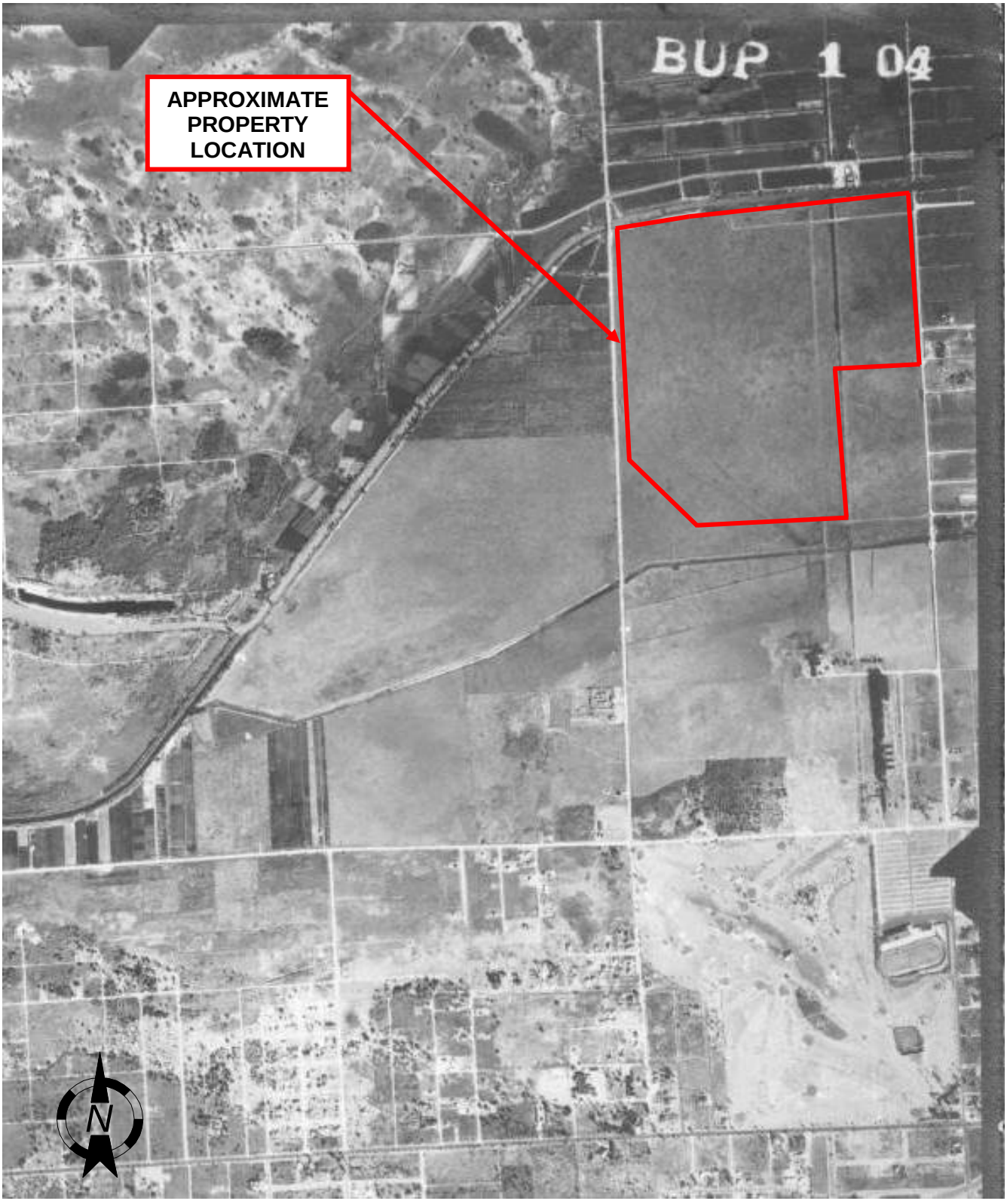
Table 1: Groundwater Analytical Summary
Grapeland Park
1550 NW 37th Avenue, Miami, Florida
HWR-0594/File#9442

Sample ID	Date	Arsenic (µg/L)
MW-31	11/11/2005	**76**
	06/27/2006	**32**
	03/17/2009	**360**
	07/01/2009	**100**
	07/30/2009	**180**
	10/08/2009	**280**
	04/19/2010	NS
	01/09/2017	**114**
MW-32R	08/03/2006	<5
	03/17/2009	<8.5 U
	07/01/2009	1.3
	07/30/2009	NS
	10/09/2009	<.36 U
	04/19/2010	NS
GCTL		10
NADC		100

Notes:
µg/L: micrograms per liter
U: flag indicates concentration was below the method detection limit (MDL).
I: flag indicates concentration was between the MDL and practical quantitation limit (PQL).
GCTL: Groundwater Cleanup Target Level as per Chapter 24 of Miami-Dade Code of Ordinances
NADC: Natural Attenuation Default Concentration as per Table V, Ch. 62-777, FAC.
IW-R (Replacement Irrigation Well)
Bold: Indicates an exceedance of the applicable GCTL.
Bold: Indicates an exceedance of the applicable NADC.

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004



Melreese Golf Course
1400 NW 37th Ave & 1550 NW 37th Ave
Miami, FL 33125
Project #: 2018-3057.JPH1

1938 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004

Melreese Golf Course
1400 NW 37th Ave & 1550 NW 37th Ave
Miami, FL 33125
Project #: 2018-3057.JPH1

1940 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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Melreese Golf Course
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Miami, FL 33125
Project #: 2018-3057.JPH1

1951 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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Melreese Golf Course
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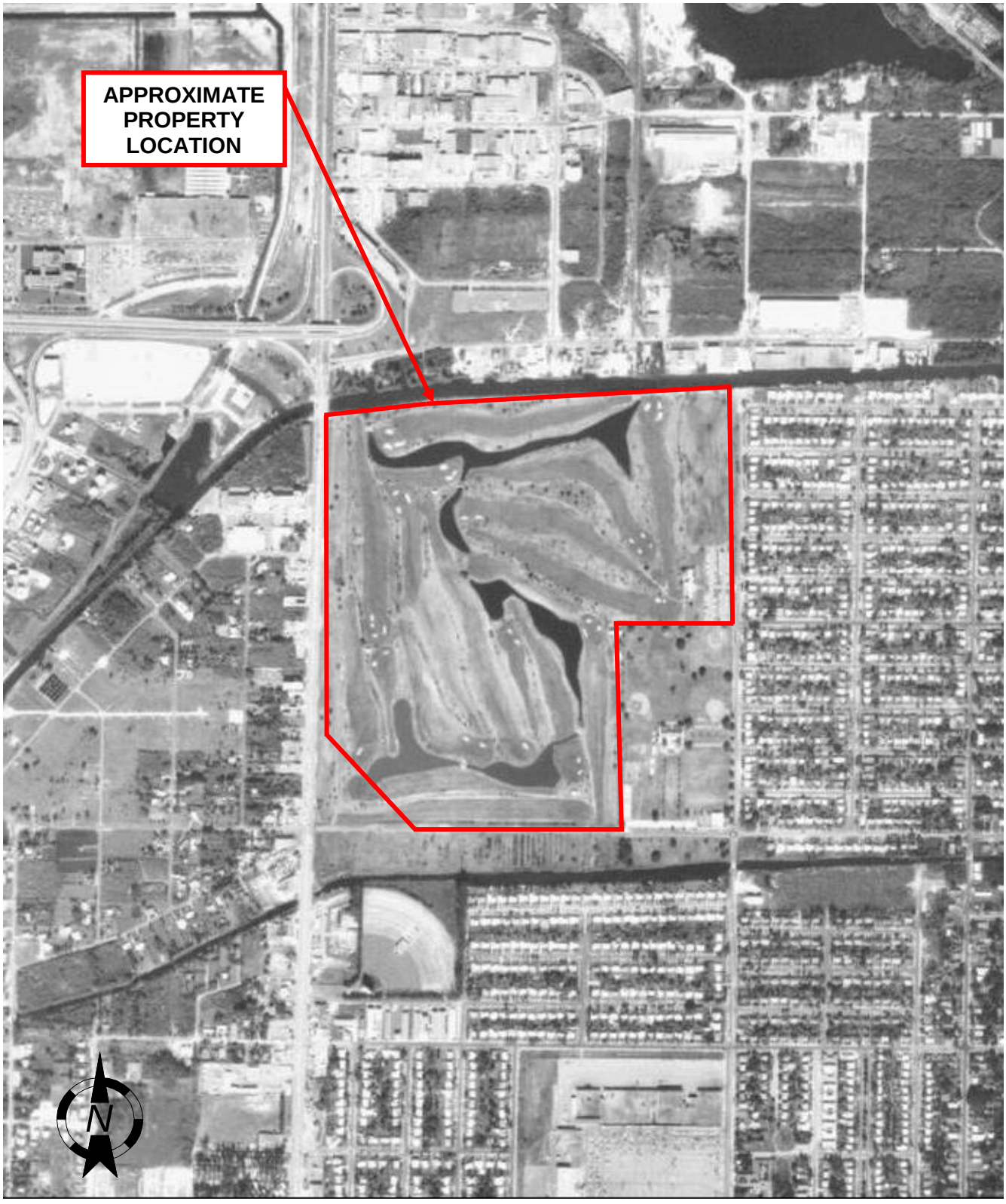
Project #: 2018-3057.JPH1

1961 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004



Melreese Golf Course
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Project #: 2018-3057.JPH1

1963 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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1968 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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1971 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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Phone (305)374-8300 Fax (305)374-9004

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1973 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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1978 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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Phone (305)374-8300 Fax (305)374-9004

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Miami, FL 33125
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1985 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
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Melreese Golf Course
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Project #: 2018-3057.JPH1

1991 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
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Project #: 2018-3057.JPH1

1994 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
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Project #: 2018-3057.JPH1

1998 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
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Phone (305)374-8300 Fax (305)374-9004

Melreese Golf Course
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Miami, FL 33125
Project #: 2018-3057.JPH1

2003 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004

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Miami, FL 33125
Project #: 2018-3057.JPH1

2006 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004

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Project #: 2018-3057.JPH1

2007 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

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Project #: 2018-3057.JPH1

2010 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
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Miami, FL 33125
Project #: 2018-3057.JPH1

2014 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004

Melreese Golf Course
1400 NW 37th Ave & 1550 NW 37th Ave
Miami, FL 33125
Project #: 2018-3057.JPH1

2017 AERIAL PHOTOGRAPH

EE&G Environmental Services, LLC

5751 Miami Lakes Drive
Miami Lakes, Florida 33014
Phone (305)374-8300 Fax (305)374-9004

Melreese Golf Course
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Miami, FL 33125
Project #: 2018-3057.JPH1

2019 AERIAL PHOTOGRAPH

APPENDIX C

SOIL FIELD LOGS, 95% UCL CALCUTIONS & RESULTS
NOTE: LABORATORY DATA PROVIDED ON SEPARATE FILE DUE TO SIZE RESTRICTIONS

Petro Hydro Soil Results - Supplemental SAR - September 2006
Melreese Golf Course
0 to 0.5-feet BLS Interval

Normal UCL Statistics for Uncensored Full Data Sets

User Selected Options					
Date/Time of Computation	ProUCL 5.16/15/2019 12:39:19 AM				
From File	WorkSheet.xls				
Full Precision	OFF				
Confidence Coefficient	95%				
C0					
General Statistics					
Total Number of Observations		50	Number of Distinct Observations	47	
			Number of Missing Observations	0	
Minimum		1.15	Mean	13.02	
Maximum		37.9	Median	11.55	
SD		8.848	SD of logged Data	0.795	
Coefficient of Variation		0.68	Skewness	0.952	
Normal GOF Test					
Shapiro Wilk Test Statistic		0.916	Shapiro Wilk GOF Test		
5% Shapiro Wilk Critical Value		0.947	Data Not Normal at 5% Significance Level		
Lilliefors Test Statistic		0.111	Lilliefors GOF Test		
5% Lilliefors Critical Value		0.125	Data appear Normal at 5% Significance Level		
Data appear Approximate Normal at 5% Significance Level					
Assuming Normal Distribution					
95% Normal UCL			95% UCLs (Adjusted for Skewness)		
95% Student's-t UCL		15.11	95% Adjusted-CLT UCL (Chen-1995)	15.25	
			95% Modified-t UCL (Johnson-1978)	15.14	
Suggested UCL to Use					
95% Student's-t UCL		**15.11**			

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Data Set

8.09
4.42
37.9
11.5
5.13
13.6
2.32
2.38
32.5
10.9
34.5
4.55
27.1
4.26
16.4
18.2
8.29
23.5
11.2
1.15
12
23.4
14.1
6.19
5.23
13.9
12.9
11.7
8.72
27.4
11.6
3.74
17.3
9.58
13.7
23.9
20.8
15.9
10.6
16.7
4.97
8.72
2.25
16.4
3.63
4.75
17
21.5
3.63
10.7

Table A - 95% UCL
Arsenic in Soils @ 0 to 0.5-feet BLS

Gamma UCL Statistics for Uncensored Full Data Sets

User Selected Options					Data Set:
					0 - 0.5 (Feet BLS)
Date/Time of Computation	ProUCL 5.15/1/2019 3:43:11 PM				***16.9***
From File	WorkSheet.xls				***17.3***
Full Precision	OFF				***23.0***
Confidence Coefficient	95%				***156***
Number of Bootstrap Operations	2000				***47.8***
					13.3
					18.8
C0					***29.8***
					2.3
General Statistics					***12.6***
Total Number of Observations	37	Number of Distinct Observations	36		**8.7**
		Number of Missing Observations	0		**11.3**
Minimum	0.6	Mean	19.67		**2.5**
Maximum	156	Median	14.3		***31.0***
SD	25.41	SD of logged Data	1.1		**2.8**
Coefficient of Variation	1.292	Skewness	4.496		0.94
					14.3
Gamma GOF Test					***13.6***
A-D Test Statistic	0.691	Anderson-Darling Gamma GOF Test			***22.9***
5% A-D Critical Value	0.774	Data appear Gamma Distributed at 5% Significance Level			***27.8***
K-S Test Statistic	0.149	Kolmogorov-Smirnov Gamma GOF Test			***19.5***
5% K-S Critical Value	0.149	Data Not Gamma Distributed at 5% Significance Level			***12.8***
Data appear to Follow Approximate Gamma Distribution at 5% Significance Level					***30.2***
					29.3
Gamma Statistics					***19.4***
k hat (MLE)	1.14	k star (bias corrected MLE)	1.066		***19.5***
Theta hat (MLE)	17.26	Theta star (bias corrected MLE)	18.46		**5.5**
nu hat (MLE)	84.35	nu star (bias corrected)	78.85		**3.6**
MLE Mean (bias corrected)	19.67	MLE Sd (bias corrected)	19.06		***27.5***
		Approximate Chi Square Value (0.05)	59.39		***27.7***
Adjusted Level of Significance	0.0431	Adjusted Chi Square Value	58.66		**6.0**
					7.7
Assuming Gamma Distribution					0.6
95% Approximate Gamma UCL (use when n>=50)	26.12	95% Adjusted Gamma UCL (use when n<50)	26.45		**9.2**
					3.4
Suggested UCL to Use					***20.4***
95% Adjusted Gamma UCL	**26.45**				**12.0**

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Table A-2 - 95% UCL
Arsenic in Soils @ 0 to 0.5-feet BLS (Less 156 mg/Kg Hotspot - Removed From Dataset)

Normal UCL Statistics for Uncensored Full Data Sets

					Data Set:
User Selected Options					**0 - 0.5 (Feet BLS)**
Date/Time of Computation	ProUCL 5.16/15/2019 12:52:19 AM				***16.9***
From File	WorkSheet.xls				***17.3***
Full Precision	OFF				***23.0***
Confidence Coefficient	95%			*Note: 156 mg/Kg Removed*	
					47.8
					13.3
C0					***18.8***
					29.8
General Statistics					**2.3**
Total Number of Observations	36	Number of Distinct Observations		35	***12.6***
		Number of Missing Observations		0	**8.7**
Minimum	0.6	Mean		15.89	**11.3**
Maximum	47.8	Median		13.95	**2.5**
SD	10.89	SD of logged Data		1.025	***31.0***
Coefficient of Variation	0.685	Skewness		0.666	**2.8**
					0.94
Normal GOF Test					***14.3***
Shapiro Wilk Test Statistic	0.944	Shapiro Wilk GOF Test			***13.6***
5% Shapiro Wilk Critical Value	0.935	Data appear Normal at 5% Significance Level			***22.9***
Lilliefors Test Statistic	0.0857	Lilliefors GOF Test			***27.8***
5% Lilliefors Critical Value	0.145	Data appear Normal at 5% Significance Level			***19.5***
Data appear Normal at 5% Significance Level					***12.8***
					30.2
Assuming Normal Distribution					***29.3***
95% Normal UCL		95% UCLs (Adjusted for Skewness)			***19.4***
95% Student's-t UCL	18.95	95% Adjusted-CLT UCL (Chen-1995)		19.09	***19.5***
		95% Modified-t UCL (Johnson-1978)		18.99	**5.5**
					3.6
Suggested UCL to Use					***27.5***
95% Student's-t UCL	**18.95**				***27.7***
					6.0
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.					**7.7**
Recommendations are based upon data size, data distribution, and skewness.					0.6
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).					**9.2**
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.					**3.4**
					20.4
					12.0

Table B - 95% UCL
Arsenic Soils @ 0.5 to 2-ft BLS (Less Highest Arsenic Value)

Gamma UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.15/1/2019 3:52:59 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics			
Total Number of Observations	36	Number of Distinct Observations	32
		Number of Missing Observations	0
Minimum	0.145	Mean	11.26
Maximum	52.8	Median	9.7
SD	10.78	SD of logged Data	1.342
Coefficient of Variation	0.957	Skewness	2.093

Gamma GOF Test		
A-D Test Statistic	0.548	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.776	Data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.111	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.151	Data appear Gamma Distributed at 5% Significance Level
Data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	1.023	k star (bias corrected MLE)	0.957
Theta hat (MLE)	11.01	Theta star (bias corrected MLE)	11.78
nu hat (MLE)	73.68	nu star (bias corrected)	68.87
MLE Mean (bias corrected)	11.26	MLE Sd (bias corrected)	11.52
		Approximate Chi Square Value (0.05)	50.77
Adjusted Level of Significance	0.0428	Adjusted Chi Square Value	50.06

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	15.28	95% Adjusted Gamma UCL (use when n<50)	15.5

Suggested UCL to Use
95% Adjusted Gamma UCL 15.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

0.5 - 2 (Feet BLS)	
15.5	
2.3	
6.7	
12	
7	
0.15	
275	Removed from Data Set
17.9	
14.9	
13.7	
8.2	
5	
1.7	
15.8	
12	
10.4	
9.8	
13.3	
8.2	
1.2	
16.1	
0.73	
30.4	
36.4	
2.7	
9.6	
2	
0.145	
12.5	
5.1	
5.1	
22.7	
1.4	
52.8	
7.4	
12	
12.7	

Table C - 95% UCL
Arsenic Soil @ 2 to 4-ft BLS

Data Set:

Gamma UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.15/1/2019 4:03:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics			
Total Number of Observations	37	Number of Distinct Observations	35
		Number of Missing Observations	0
Minimum	0.135	Mean	18.46
Maximum	89.4	Median	10
SD	22.36	SD of logged Data	1.611
Coefficient of Variation	1.211	Skewness	1.718

Gamma GOF Test			
A-D Test Statistic	0.208	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.795	Data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0711	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.151	Data appear Gamma Distributed at 5% Significance Level	
Data appear Gamma Distributed at 5% Significance Level			

Gamma Statistics			
k hat (MLE)	0.678	k star (bias corrected MLE)	0.641
Theta hat (MLE)	27.21	Theta star (bias corrected MLE)	28.78
nu hat (MLE)	50.19	nu star (bias corrected)	47.46
MLE Mean (bias corrected)	18.46	MLE Sd (bias corrected)	23.05
		Approximate Chi Square Value (0.05)	32.65
Adjusted Level of Significance	0.0431	Adjusted Chi Square Value	32.11

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	26.83	95% Adjusted Gamma UCL (use when n<50)	27.28

Suggested UCL to Use
95% Adjusted Gamma UCL 27.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2 to 4-feet BLS
6.2
0.97
0.43
89.4
24.3
0.52
32
26.9
7.8
0.53
10
8.3
47
63
14.4
3.0
9.9
4
12.8
29.5
49.7
0.135
12.8
26.4
7.1
1.6
2.3
0.71
2.4
4.1
3.5
10
16.6
49.3
10.4
19.1
75.9

Table D - 95% UCL
Arsenic Soils @ 4 to 6-ft BLS

Gamma UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.15/1/2019 4:13:39 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics			
Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.56	Mean	17.27
Maximum	78.1	Median	6.8
SD	21.9	SD of logged Data	1.302
Coefficient of Variation	1.268	Skewness	1.916

Gamma GOF Test		
A-D Test Statistic	0.456	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.771	Data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.186	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.229	Data appear Gamma Distributed at 5% Significance Level
Data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	0.828	k star (bias corrected MLE)	0.707
Theta hat (MLE)	20.85	Theta star (bias corrected MLE)	24.42
nu hat (MLE)	24.85	nu star (bias corrected)	21.22
MLE Mean (bias corrected)	17.27	MLE Sd (bias corrected)	20.54
		Approximate Chi Square Value (0.05)	11.75
Adjusted Level of Significance	0.0324	Adjusted Chi Square Value	10.89

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	31.18	95% Adjusted Gamma UCL (use when n<50)	33.64

Suggested UCL to Use
95% Adjusted Gamma UCL 33.64

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Data Set:

4 to 6-ft BLS
4.2
8.2
78.1
3.6
40
3.4
18.2
6.4
12.4
47.7
0.56
22.5
6.8
4.8
2.2

APPENDIX D

GROUNDWATER FIELD LOGS & RESULTS
NOTE: LABORATORY DATA PROVIDED ON SEPARATE FILE DUE TO SIZE RESTRICTIONS

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-04-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-18-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-04-2019	0820	25.2 C	100 %		100			P	P
ICV	Michael Van Ry/EE&G	3-04-2019	0825	25.2 C	100 %		100			P	P
CCV	Michael Van Ry/EE&G	3-04-2019	1555	26.7 C	100 %		101			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-04-2019	0750	8GG805	7/2019	1.413	1.413	P	P
ICV	Michael Van Ry/EE&G	3-04-2019	0755	8GG805	7/2019	1.413	1.413	P	P
CCV	Michael Van Ry/EE&G	3-04-2019	1540	8GG805	7/2019	1.413	1.412	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-04-2019	0800	8GH706	8/2020	7.0	7.0		P	P
Calibr.	Michael Van Ry/EE&G	3-04-2019	0805	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Michael Van Ry/EE&G	3-04-2019	0810	8GG016	7/2020	10.0	10.0		P	P
ICV	Michael Van Ry/EE&G	3-04-2019	0815	8GH706	8/2020	7.0	7.0		P	P
CCV	Michael Van Ry/EE&G	3-04-2019	1536	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 3-04-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-04-2019 / 0822	Michael Van Ry/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10 NTU	[P] F
3-04-2019 / 0822	Michael Van Ry/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.7 NTU	[P] F
3-04-2019 / 0823	Michael Van Ry/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100.2 NTU	[P] F
3-04-2019 / 0823	Michael Van Ry/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	799 NTU	[P] F
3-04-2019 / 1600	Michael Van Ry/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
3-04-2019 / 1600	Michael Van Ry/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
3-04-2019 / 1601	Michael Van Ry/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
3-04-2019 / 1601	Michael Van Ry/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	797 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-11-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-18-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-11-2019	0820	26.4 C	100 %		100			P	P
ICV	Michael Van Ry/EE&G	3-11-2019	0825	26.4 C	100 %		100			P	P
CCV	Michael Van Ry/EE&G	3-11-2019	1545	28.9 C	100 %		100			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-11-2019	0925	8GG805	7/2019	1.413	1.413	P	P
ICV	Michael Van Ry/EE&G	3-11-2019	0930	8GG805	7/2019	1.413	1.413	P	P
CCV	Michael Van Ry/EE&G	3-11-2019	1530	8GG805	7/2019	1.413	1.413	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Michael Van Ry/EE&G	3-11-2019	0935	8GH706	8/2020	7.0	7.0		P	P
Calibr.	Michael Van Ry/EE&G	3-11-2019	0940	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Michael Van Ry/EE&G	3-11-2019	0945	8GG016	7/2020	10.0	10.0		P	P
ICV	Michael Van Ry/EE&G	3-11-2019	0950	8GH706	8/2020	7.0	7.0		P	P
CCV	Michael Van Ry/EE&G	3-11-2019	1536	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 3-11-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-11-2019 / 0830	Michael Van Ry/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10 NTU	[P] F
3-11-2019 / 0830	Michael Van Ry/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
3-11-2019 / 0831	Michael Van Ry/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100.1 NTU	[P] F
3-11-2019 / 0831	Michael Van Ry/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	800 NTU	[P] F
3-11-2019 / 1600	Michael Van Ry/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
3-11-2019 / 1600	Michael Van Ry/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	20 NTU	[P] F
3-11-2019 / 1601	Michael Van Ry/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
3-11-2019 / 1601	Michael Van Ry/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	799 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-26-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-18-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Jennifer Vega/EE&G	3-26-2019	0825	24.9 C	100 %		100			P	P
ICV	Jennifer Vega/EE&G	3-26-2019	0835	24.9 C	100 %		100			P	P
CCV	Jennifer Vega/EE&G	3-26-2019	0355	26.5 C	100 %		99			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Jennifer Vega/EE&G	3-26-2019	0745	8GG805	7/2019	1.413	1.413	P	P
ICV	Jennifer Vega/EE&G	3-26-2019	0750	8GG805	7/2019	1.413	1.413	P	P
CCV	Jennifer Vega/EE&G	3-26-2019	0340	8GG805	7/2019	1.413	1.411	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Jennifer Vega/EE&G	3-26-2019	0755	8GH706	8/2020	7.0	6.9		P	P
Calibr.	Jennifer Vega/EE&G	3-26-2019	0800	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Jennifer Vega/EE&G	3-26-2019	0805	8GG016	7/2020	10.0	10.1		P	P
ICV	Jennifer Vega/EE&G	3-26-2019	0810	8GH706	8/2020	7.0	7.0		P	P
CCV	Jennifer Vega/EE&G	3-26-2019	0345	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 3-26-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-26-2019 / 0840	Jennifer Vega/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10 NTU	[P] F
3-26-2019 / 0840	Jennifer Vega/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.7 NTU	[P] F
3-26-2019 / 0841	Jennifer Vega/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100.2 NTU	[P] F
3-26-2019 / 0841	Jennifer Vega/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	799 NTU	[P] F
3-26-2019 / 1600	Jennifer Vega/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
3-26-2019 / 1600	Jennifer Vega/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
3-26-2019 / 1601	Jennifer Vega/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
3-26-2019 / 1601	Jennifer Vega/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	797 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-26-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 3-02-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-26-2019	0915	25.3 C	100 %		100			P	P
ICV	Kelsey Cortina - EE&G	3-26-2019	0925	25.3 C	100 %		100			P	P
CCV	Kelsey Cortina - EE&G	3-26-2019	1350	27.8 C	100 %		97			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-26-2019	0840	8GG805	7/2019	1.413	1.413	P	P
ICV	Kelsey Cortina - EE&G	3-26-2019	0845	8GG805	7/2019	1.413	1.413	P	P
CCV	Kelsey Cortina - EE&G	3-26-2019	1330	8GG805	7/2019	1.413	1.410	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-26-2019	0850	8GH706	8/2020	7.0	7.0		P	P
Calibr.	Kelsey Cortina - EE&G	3-26-2019	0900	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Kelsey Cortina - EE&G	3-26-2019	0905	8GG016	7/2020	10.0	10.0		P	P
ICV	Kelsey Cortina - EE&G	3-26-2019	0910	8GH706	8/2020	7.0	7.0		P	P
CCV	Kelsey Cortina - EE&G	3-26-2019	1340	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #1 Date of Last Calibration: 3-26-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-26-2019 / 0930	Kelsey Cortina - EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10 NTU	[P] F
3-26-2019 / 0930	Kelsey Cortina - EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	20 NTU	[P] F
3-26-2019 / 0931	Kelsey Cortina - EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	99.5 NTU	[P] F
3-26-2019 / 0931	Kelsey Cortina - EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	799 NTU	[P] F
3-26-2019 / 1400	Kelsey Cortina - EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.2 NTU	[P] F
3-26-2019 / 1400	Kelsey Cortina - EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.8 NTU	[P] F
3-26-2019 / 1401	Kelsey Cortina - EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	99.8 NTU	[P] F
3-26-2019 / 1401	Kelsey Cortina - EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	796 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-27-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 3-02-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-27-2019	0830	25.3 C	100 %		100			P	P
ICV	Kelsey Cortina - EE&G	3-27-2019	0835	25.3 C	100 %		100			P	P
CCV	Kelsey Cortina - EE&G	3-27-2019	1045	27.8 C	100 %		97			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-27-2019	0830	8GG805	7/2019	1.413	1.413	P	P
ICV	Kelsey Cortina - EE&G	3-27-2019	0835	8GG805	7/2019	1.413	1.413	P	P
CCV	Kelsey Cortina - EE&G	3-27-2019	1050	8GG805	7/2019	1.413	1.410	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Kelsey Cortina - EE&G	3-27-2019	0848	8GH706	8/2020	7.0	7.0		P	P
Calibr.	Kelsey Cortina - EE&G	3-27-2019	0851	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Kelsey Cortina - EE&G	3-27-2019	0854	8GG016	7/2020	10.0	10.0		P	P
ICV	Kelsey Cortina - EE&G	3-27-2019	0858	8GH706	8/2020	7.0	7.0		P	P
CCV	Kelsey Cortina - EE&G	3-27-2019	1055	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #1 Date of Last Calibration: 3-27-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-27-2019 / 0915	Kelsey Cortina - EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
3-27-2019 / 0915	Kelsey Cortina - EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.8 NTU	[P] F
3-27-2019 / 0915	Kelsey Cortina - EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	99.5 NTU	[P] F
3-27-2019 / 0915	Kelsey Cortina - EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	797 NTU	[P] F
3-27-2019 / 1100	Kelsey Cortina - EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.2 NTU	[P] F
3-27-2019 / 1100	Kelsey Cortina - EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.8 NTU	[P] F
3-27-2019 / 1100	Kelsey Cortina - EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	99.5 NTU	[P] F
3-27-2019 / 1100	Kelsey Cortina - EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	796 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 3-27-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-17-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	3-27-2019	0650	24.9 C	100 %		100			P	P
ICV	Russell Fernandez/EE&G	3-27-2019	0700	24.9 C	100 %		100			P	P
CCV	Russell Fernandez/EE&G	3-27-2019	1325	26.5 C	100 %		99			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	3-27-2019	0620	8GG805	7/2019	1.413	1.413	P	P
ICV	Russell Fernandez/EE&G	3-27-2019	0625	8GG805	7/2019	1.413	1.413	P	P
CCV	Russell Fernandez/EE&G	3-27-2019	1310	8GG805	7/2019	1.413	1.411	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	3-27-2019	0630	8GH706	8/2020	7.0	6.9		P	P
Calibr.	Russell Fernandez/EE&G	3-27-2019	0635	8GG386	7/2020	4.0	4.0		P	P
Calibr.	Russell Fernandez/EE&G	3-27-2019	0640	8GG016	7/2020	10.0	10.1		P	P
ICV	Russell Fernandez/EE&G	3-27-2019	0645	8GH706	8/2020	7.0	7.0		P	P
CCV	Russell Fernandez/EE&G	3-27-2019	1315	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 3-27-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
3-27-2019 / 0705	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10 NTU	[P] F
3-27-2019 / 0705	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.7 NTU	[P] F
3-27-2019 / 0706	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100.2 NTU	[P] F
3-27-2019 / 0706	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	800 NTU	[P] F
3-27-2019 / 1330	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
3-27-2019 / 1330	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
3-27-2019 / 1331	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
3-27-2019 / 1311	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	798 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 4-08-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-17-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-08-2019	0920	25.5 C	100 %		100			P	P
ICV	Russell Fernandez/EE&G	4-08-2019	0930	25.5 C	100 %		100			P	P
CCV	Russell Fernandez/EE&G	4-08-2019	1450	27.2 C	100 %		99			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-08-2019	0850	8GG805	7/2019	1.413	1.411	P	P
ICV	Russell Fernandez/EE&G	4-08-2019	0855	8GG805	7/2019	1.413	1.413	P	P
CCV	Russell Fernandez/EE&G	4-08-2019	1430	8GG805	7/2019	1.413	1.413	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-08-2019	0900	8GH706	8/2020	7.0	7.0		P	P
Calibr.	Russell Fernandez/EE&G	4-08-2019	0905	8GG386	7/2020	4.0	4.2		P	P
Calibr.	Russell Fernandez/EE&G	4-08-2019	0910	8GG016	7/2020	10.0	10.1		P	P
ICV	Russell Fernandez/EE&G	4-08-2019	0915	8GH706	8/2020	7.0	7.1		P	P
CCV	Russell Fernandez/EE&G	4-08-2019	1440	8GH706	8/2020	7.0	7.0		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 4-08-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
4-08-2019 / 0935	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.2 NTU	[P] F
4-08-2019 / 0935	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.8 NTU	[P] F
4-08-2019 / 0936	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
4-08-2019 / 0936	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	798 NTU	[P] F
4-08-2019 / 1455	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
4-08-2019 / 1455	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
4-08-2019 / 1456	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100 NTU	[P] F
4-08-2019 / 1456	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	800 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

Boldly"X" this box if there is qualified data on this page.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Meter ID: YSI 556 MPM # 7 **Project:** Melreese Golf Course (2018-3057)

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site 4-09-2019

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 2-17-2019

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-09-2019	0900	24.3 C	100 %		99			P	P
ICV	Russell Fernandez/EE&G	4-09-2019	0910	24.2 C	100 %		100			P	P
CCV	Russell Fernandez/EE&G	4-09-2019	1350	27.0 C	100 %		100			P	P
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
DO Acceptance criteria from Table ±0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-09-2019	0830	8GG805	7/2019	1.413	1.412	P	P
ICV	Russell Fernandez/EE&G	4-09-2019	0835	8GG805	7/2019	1.413	1.413	P	P
CCV	Russell Fernandez/EE&G	4-09-2019	1330	8GG805	7/2019	1.413	1.411	P	P
CCV									

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Russell Fernandez/EE&G	4-09-2019	0840	8GH706	8/2020	7.0	6.9		P	P
Calibr.	Russell Fernandez/EE&G	4-09-2019	0845	8GG386	7/2020	4.0	3.8		P	P
Calibr.	Russell Fernandez/EE&G	4-09-2019	0850	8GG016	7/2020	10.0	10.0		P	P
ICV	Russell Fernandez/EE&G	4-09-2019	0855	8GH706	8/2020	7.0	7.0		P	P
CCV	Russell Fernandez/EE&G	4-09-2019	1340	8GH706	8/2020	7.0	6.9		P	P
CCV										

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50; mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Turbidity Calibration Log (DEP SOPs FT1000 FT1600)
Regional Operations Centers

Meter ID: Hach 2100Q Unit #2 Date of Last Calibration: 4-09-2019 Project Name: Melreese Golf Course (2018-3057)

QUARTERLY CALIBRATION: Sampler Name:_____ Date:_____

All Times Are : [ETZ] or CTZ (circle one) Time Performed (24 hr):_____

Standard Value *Use Primary Formazin Standards*	Exp. Date	Lot #	Calibrated *(Yes/No)*	Next Value Shown	Pass or Fail? *(Circle One)*
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F
_____NTU	_____	_____	_____	_____NTU	P F

INITIAL CALIBRATION VERIFICATION: Sampler Name:_____ Date/Time (24 hr):_____

Only perform ICV immediately after quarterly calibration.

PRIMARY FORMAZIN ICV:

Standard Value	Exp. Date	Lot #	Reading	Pass or Fail? *(circle one)* **See Acceptance Criteria Below*
_____NTU	_____	_____	_____NTU	P F

SECONDARY GEL STANDARD QUARTERLY VERIFICATION:

Standard Value Range	Previous Reading	Exp. Date	Lot #	New Reading	Acceptable Range **Calculate using new reading & acceptance criteria below.*
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____
_____NTU	_____NTU	_____	_____	_____NTU	_____

DAILY CONTINUING CALIBRATION VERIFICATION:

Date/Time *(24 hr)*	Sampler Name	Standard Type *(circle one)*	Standard Value	Exp. Date	Lot #	Reading	Pass or Fail?* *(Circle One)*
4-09-2019 / 0912	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.0 NTU	[P] F
4-09-2019 / 0912	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	20.0 NTU	[P] F
4-09-2019 / 0913	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	100.2 NTU	[P] F
4-09-2019 / 0913	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	799 NTU	[P] F
4-09-2019 / 1355	Russell Fernandez/EE&G	[Formazin] / Gel	10 NTU	12/2019	24641-01	10.1 NTU	[P] F
4-09-2019 / 1355	Russell Fernandez/EE&G	[Formazin] / Gel	20 NTU	12/2019	24641-02	19.9 NTU	[P] F
4-09-2019 / 1356	Russell Fernandez/EE&G	[Formazin] / Gel	100 NTU	12/2019	24641-03	99.8 NTU	[P] F
4-09-2019 / 1356	Russell Fernandez/EE&G	[Formazin] / Gel	800 NTU	12/2019	24641-04	800 NTU	[P] F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F
_____	_____	Formazin / Gel	_____NTU	_____	_____	_____NTU	P F

*Acceptance Criteria:
0.1-10 NTU → ±10 %; 11-40 NTU → ±8 %; 41-100 NTU → ±6.5 %; >100 NTU → ±5 %;

Form effective April 1, 2015

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-44	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.88 feet to 11.88 feet	STATIC DEPTH TO WATER (feet BLS): 4.01	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.88 feet – 4.01 feet) X 0.16 gallons/foot = 1.26 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 09:36	PURGING ENDED AT: 10:04	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
09:52	2.0	2.0	0.125	4.15	6.92	0.902	4.16	8.2	25.59	Clear	None
09:56	0.5	2.5	0.125	4.15	6.94	0.889	3.62	6.5	25.51	Clear	None
10:00	0.5	3.0	0.125	4.15	6.95	0.889	3.33	6.0	25.55	Clear	None
10:04	0.5	3.5	0.125	4.15	6.96	0.897	3.22	5.6	25.51	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:04	SAMPLING ENDED AT: 10:14

PUMP OR TUBING DEPTH IN WELL (feet): 8.0	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: *T.O.C. -0.2' YSI 556 MPM # 7 TBM# 2*

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-42	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.13 feet to 12.13 feet	STATIC DEPTH TO WATER (feet BLS): 4.97	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.13 feet – 4.97 feet) X 0.16 gallons/foot = 1.15 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	PURGING INITIATED AT: 10:36	PURGING ENDED AT: 11:04	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:52	2.0	2.0	0.125	5.54	7.24	0.530	2.23	10.9	25.01	Clear	None
10:56	0.5	2.5	0.125	5.54	7.21	0.528	1.97	7.2	25.08	Clear	None
11:00	0.5	3.0	0.125	5.54	7.21	0.529	1.63	5.8	25.02	Clear	None
11:04	0.5	3.5	0.125	5.54	7.21	0.533	1.49	5.3	25.02	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:04	SAMPLING ENDED AT: 11:14

PUMP OR TUBING DEPTH IN WELL (feet): 8.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: T.O.C. -0.15' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: SCS-MW-1	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.1 feet to 12.1 feet	STATIC DEPTH TO WATER (feet BLS): 4.15	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.1 feet – 4.15 feet) X 0.09 gallons/foot = 0.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 11:40	PURGING ENDED AT: 12:04	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:52	1.5	1.5	0.125	4.35	7.09	0.590	5.84	8.7	23.58	Clear	None
11:56	0.5	2.0	0.125	4.35	7.09	0.577	5.10	6.9	23.65	Clear	None
12:00	0.5	2.5	0.125	4.35	7.10	0.575	4.72	6.3	23.61	Clear	None
12:04	0.5	3.0	0.125	4.35	7.10	0.574	4.55	5.7	23.52	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:04	SAMPLING ENDED AT: 12:14
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: T.O.C. -0.4' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-39	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.6 feet to 11.6 feet	STATIC DEPTH TO WATER (feet BLS): 3.51	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.6 feet – 3.51 feet) X 0.04 gallons/foot = 0.32 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	PURGING INITIATED AT: 12:42	PURGING ENDED AT: 12:54	TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
12:48	0.75	0.75	0.125	3.61	7.39	0.394	2.22	15.1	26.41	Clear	None
12:50	0.25	1.0	0.125	3.61	7.31	0.391	2.20	10.7	26.16	Clear	None
12:52	0.25	1.25	0.125	3.61	7.30	0.389	2.12	9.0	25.92	Clear	None
12:54	0.25	1.50	0.125	3.61	7.31	0.389	2.03	8.0	25.87	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:54	SAMPLING ENDED AT: 13:04
PUMP OR TUBING DEPTH IN WELL (feet): 7.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: T.O.C. -0.3' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

3. BLS = Below Land Surface

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
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GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: SCS-MW-2	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.86 feet to 11.86 feet	STATIC DEPTH TO WATER (feet BLS): 3.92	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.86 feet – 3.92 feet) X 0.09 gallons/foot = 0.71 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 13:34	PURGING ENDED AT: 14:02	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
13:50	2.0	2.0	0.125	3.95	7.26	0.508	3.97	4.6	26.12	Clear	None
13:54	0.5	2.5	0.125	3.95	7.26	0.495	3.11	3.9	26.06	Clear	None
13:58	0.5	3.0	0.125	3.95	7.26	0.487	2.73	3.6	25.93	Clear	None
14:02	0.5	3.5	0.125	3.95	7.25	0.487	2.44	3.4	26.03	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 14:02	SAMPLING ENDED AT: 14:12
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: T.O.C. -0.3' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
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Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-31	SAMPLE ID: PACE	DATE: 3 / 4 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.6 feet to 12.6 feet	STATIC DEPTH TO WATER (feet BLS): 4.08	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.6 feet – 4.08 feet) X 0.16 gallons/foot = 1.36 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 14:38	PURGING ENDED AT: 15:06	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
14:54	2.0	2.0	0.125	4.21	7.33	0.536	17.0	24.8	27.65	Clear	None
14:58	0.5	2.5	0.125	4.21	7.32	0.536	15.4	11.0	27.60	Clear	None
15:02	0.5	3.0	0.125	4.21	7.32	0.536	13.9	7.4	27.57	Clear	None
15:06	0.5	3.5	0.125	4.21	7.32	0.536	12.4	6.9	27.60	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:06	SAMPLING ENDED AT: 15:16

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC (8260)	APP	100
	1	AG	250 mL	-	-	-	PAHs (8270)	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH (FL-PRO)	APP	500
	1	AG	1 L	-	-	-	Pest. (8081)	APP	500
	1	AG	1 L	-	-	-	Organo Pest (8141)	APP	500
	1	AG	1 L	-	-	-	Herb. (8151)	APP	500
	1	AG	1 L	-	-	-	Dioxins (8290)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Metals (6010/7470)	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Metals (6010/7470)	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	PE	250 mL	-	-	-	Nitrates/Nitrites (300.0)	APP	500

REMARKS: *T.O.C. -0.5' YSI 556 MPM # 7 TBM# 2*

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: SCS-MW-2	SAMPLE ID: PACE	DATE: 3 / 11 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.86 feet to 11.86 feet	STATIC DEPTH TO WATER (feet BLS): 3.83	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.86 feet – 3.83 feet) X 0.09 gallons/foot = 0.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 09:56	PURGING ENDED AT: 10:24	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:12	2.0	2.0	0.125	3.84	6.36	0.430	2.36	11.1	26.08	Clear	None
10:16	0.5	2.5	0.125	3.84	6.42	0.426	1.97	11.4	26.04	Clear	None
10:20	0.5	3.0	0.125	3.84	6.50	0.420	1.68	10.7	25.13	Clear	None
10:24	0.5	3.5	0.125	3.84	6.54	0.420	1.47	11.0	26.07	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Michael Van Ry / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:24	SAMPLING ENDED AT: 10:26

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: Y [N] Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	AG	1 L	-	-	-	Pest. (8141)	APP	500

REMARKS: T.O.C. -0.3' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: GW-1 (SB-A)	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (SP15) DIAMETER (inches): 0.75	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 6 feet to 10 feet	STATIC DEPTH TO WATER (feet BLS): ~6.0	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (10 feet – 6 feet) X 0.02 gallons/foot = 0.08 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 9:26	PURGING ENDED AT: 9:38	TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
9:34	1.0	1.0	0.125	~6.0	6.87	0.804	OR	6.9	27.09	Cloudy	Hydrocarbon
9:36	0.25	1.25	0.125	~6.0	6.99	0.816	OR	8.1	27.14	Cloudy	Hydrocarbon
9:38	0.25	1.5	0.125	~6.0	7.02	0.839	227	3.8	27.20	Cloudy	Hydrocarbon

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jennifer Vega / EE&G	SAMPLER(S) SIGNATURE(S): J. Vega	SAMPLING INITIATED AT: 9:38	SAMPLING ENDED AT: 9:40
PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: Y [N] Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	AG	250 mL	-	-	-	PAH	APP	500
	2	AG	125 mL	H2SO4	-	< 2	TPH	APP	500
	3	CG	40 mL	HCl	-	< 2	VOC	APP	100

REMARKS: T.O.C. YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-1	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 3 feet to 13 feet	STATIC DEPTH TO WATER (feet BLS): 4.7	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13 feet – 4.7 feet) X 0.09 gallons/foot = 0.74 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 10:17	PURGING ENDED AT: 10:37	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:25	1.0	1.0	0.125	4.7	7.26	0.463	13.7	7.9	26.09	Clear	Hydrocarbon
10:29	0.5	1.5	0.125	4.7	7.25	0.461	11.8	7.9	26.13	Clear	Hydrocarbon
10:33	0.5	2.0	0.125	4.7	7.19	0.455	7.4	7.19	26.05	Clear	Hydrocarbon
10:37	0.5	2.5	0.125	4.7	7.18	0.453	4.9	4.6	26.05	Clear	Hydrocarbon

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:38	SAMPLING ENDED AT: 10:45

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.3' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-2	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 4.69 feet to 14.69 feet	STATIC DEPTH TO WATER (feet BLS): 6.66	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.69 feet – 6.66 feet) X 0.09 gallons/foot = 0.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 11:07	PURGING ENDED AT: 11:27	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:15	1.0	1.0	0.125	6.66	6.77	0.700	27.3	8.1	25.85	Clear	None
11:19	0.5	1.5	0.125	6.66	6.84	0.664	21.8	4.7	25.86	Clear	None
11:23	0.5	2.0	0.125	6.66	6.87	0.652	17.8	3.5	25.96	Clear	None
11:27	0.5	2.5	0.125	6.66	6.87	0.654	14.6	3.0	25.88	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jennifer Vega / EE&G	SAMPLER(S) SIGNATURE(S): J. Vega	SAMPLING INITIATED AT: 11:27	SAMPLING ENDED AT: 11:30

PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.28' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-3	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.87 feet to 12.87 feet	STATIC DEPTH TO WATER (feet BLS): 4.58	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.87 feet – 4.58 feet) X 0.09 gallons/foot = 0.75 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 11:51	PURGING ENDED AT: 12:11	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:59	1.0	1.0	0.125	4.58	6.87	0.744	85.7	11.2	25.70	Clear	None
12:03	0.5	1.5	0.125	4.58	6.84	0.723	71.8	5.7	25.40	Clear	None
12:07	0.5	2.0	0.125	4.58	6.83	0.714	43.1	4.0	25.26	Clear	None
12:11	0.5	2.5	0.125	4.58	6.80	0.711	26.4	3.1	25.28	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jennifer Vega / EE&G	SAMPLER(S) SIGNATURE(S): J. Vega	SAMPLING INITIATED AT: 12:11	SAMPLING ENDED AT: 12:14

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	AG	1 L	-	-	-	Dioxins & Furans	APP	500

REMARKS: T.O.C. -0.27' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-4	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.89 feet to 12.89 feet	STATIC DEPTH TO WATER (feet BLS): 4.46	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.89 feet – 4.46 feet) X 0.09 gallons/foot = 0.76 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 13:06	PURGING ENDED AT: 13:26	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
13:14	1.0	1.0	0.125	4.46	7.04	0.510	3.16	8.2	26.01	Clear	None
13:18	0.5	1.5	0.125	4.46	7.04	0.509	1.31	5.0	25.91	Clear	None
13:22	0.5	2.0	0.125	4.46	7.07	0.509	0.76	4.5	25.93	Clear	None
13:26	0.5	2.5	0.125	4.46	7.08	0.509	1.12	3.9	25.90	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jennifer Vega / EE&G	SAMPLER(S) SIGNATURE(S): J. Vega	SAMPLING INITIATED AT: 13:26	SAMPLING ENDED AT: 13:30

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500
	1	AG	1 L	-	-	-	Dioxins & Furans	APP	500

REMARKS: T.O.C. -0.29' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-38	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.38 feet to 12.38 feet	STATIC DEPTH TO WATER (feet BLS): 4.40	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.38 feet – 4.40 feet) X 0.16 gallons/foot = 1.28 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 12:05	PURGING ENDED AT: 12:52	TOTAL VOLUME PURGED (gallons): 9.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
12:40	8.0	8.0	0.125	4.48	6.54	0.498	31.8	11.6	26.48	Clear	None
12:44	0.5	8.5	0.125	4.48	6.53	0.496	28.2	11.5	26.44	Clear	None
12:48	0.5	9.0	0.125	4.48	6.53	0.495	23.6	11.4	26.48	Clear	None
12:52	0.5	9.5	0.125	4.48	6.54	0.495	17.1	11.4	26.49	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 12:52	SAMPLING ENDED AT: 12:55

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.37' YSI 556 MPM # 7 TBM# 1

Sediment buildup encountered, well had thick brown water – purge to clear of approximately 8 gallons.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-5	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 3.05 feet to 13.05 feet	STATIC DEPTH TO WATER (feet BLS): 4.5	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.05 feet – 4.5 feet) X 0.09 gallons/foot = 0.77 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 13:34	PURGING ENDED AT: 13:54	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
13:42	1.0	1.0	0.125	4.5	6.85	0.879	22.1	8.6	25.67	Clear	Organic
13:46	0.5	1.5	0.125	4.5	6.85	0.881	21.5	8.2	25.71	Clear	Organic
13:50	0.5	2.0	0.125	4.5	6.84	0.881	19.8	7.9	25.73	Clear	Organic
13:54	0.5	2.5	0.125	4.5	6.84	0.882	18.5	7.8	25.76	Clear	Organic

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 13:54	SAMPLING ENDED AT: 13:57
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia (350.1)	APP	500

REMARKS: T.O.C. -0.35' YSI 556 MPM # 7 TBM# 1

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-9	SAMPLE ID: PACE	DATE: 3 / 26 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.97 feet to 12.97 feet	STATIC DEPTH TO WATER (feet BLS): 4.07	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.97 feet – 4.07 feet) X 0.16 gallons/foot = 1.42 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	PURGING INITIATED AT: 14:34	PURGING ENDED AT: 15:02	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
14:50	2.0	2.0	0.125	4.07	6.92	1.032	12.4	12.5	27.20	Orange Murky	Hydrocarbon
14:54	0.5	2.5	0.125	4.07	6.74	1.047	10.3	8.7	27.03	Clear	Hydrocarbon
14:58	0.5	3.0	0.125	4.07	6.40	1.054	11.5	5.4	26.96	Clear	Hydrocarbon
15:02	0.5	3.5	0.125	4.07	6.37	1.051	9.8	4.8	26.83	Clear	Hydrocarbon

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 15:02	SAMPLING ENDED AT: 15:15

PUMP OR TUBING DEPTH IN WELL (feet): 8.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	-	< 2	VOC	APP	100
	1	AG	250 mL	-	-	-	PAH	APP	500
	2	AG	100 mL	H2SO4	-	< 2	TPH	APP	500
	1	AG	1 L	-	-	-	Pest. 8141	APP	500
	1	AG	1 L	-	-	-	Herb. 8151	APP	500
	1	PE	250 mL	H2SO4	-	< 2	Ammonia	APP	500
	1	AG	1 L	-	-	< 2	OC Pest. 8081	APP	500
	1	PE	250 mL	HNO3	-	< 2	As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pe, Fe	APP	500

REMARKS: *T.O.C. -0.27' YSI 556 MPM # 7 TBM# 2*

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-44	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.88 feet to 11.88 feet	STATIC DEPTH TO WATER (feet BLS): 4.0	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (11.88 feet – 4.0 feet) X 0.16 gallons/foot = 1.26 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X 20 feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 07:27	PURGING ENDED AT: 07:51	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
07:43	2.0	2.0	0.125	4	6.82	0.967	10.5	8.4	24.20	Clear	None
07:47	0.5	2.5	0.125	4	6.84	0.961	7.9	5.8	24.63	Clear	None
07:51	0.5	3.0	0.125	4	6.82	0.958	8.3	4.7	24.54	Clear	None
07:55	0.5	3.5	0.125	4	6.82	0.957	7.4	4.1	24.58	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 07:55	SAMPLING ENDED AT: 08:00

PUMP OR TUBING DEPTH IN WELL (feet): 8.0	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Fe	APP	500
	1	AG	1 L	-	-	-	Dieldrin 8081	APP	500

REMARKS: T.O.C. -0.2' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
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GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: SCS-MW-1	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.1 feet to 12.1 feet	STATIC DEPTH TO WATER (feet BLS): 4.0	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.1 feet – 4.0 feet) X 0.09 gallons/foot = 0.73 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 08:45	PURGING ENDED AT: 09:01	TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
08:53	1.0	1.0	0.125	4.0	6.89	0.711	48.9	0.5	22.85	Murky / Orange	None
08:57	0.5	1.5	0.125	4.0	6.90	0.650	27.6	2.7	22.87	Murky / Orange	None
09:01	0.5	2.0	0.125	4.0	6.92	0.702	25.2	3.3	22.92	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 09:01	SAMPLING ENDED AT: 09:10

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Fe	APP	500
	1	AG	1 L	-	-	-	Dieldrin 8081	APP	500

REMARKS: T.O.C. -0.4' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

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Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-8	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.89 feet to 12.89 feet	STATIC DEPTH TO WATER (feet BLS): 4.3	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.89 feet – 4.3 feet) X 0.09 gallons/foot = 0.77 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 09:28	PURGING ENDED AT: 09:48	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
09:36	1.0	1.0	0.125	4.3	7.09	0.614	102	5.7	24.98	Cloudy	None
09:40	0.5	1.5	0.125	4.3	7.08	0.611	67.3	4.8	24.95	Cloudy	None
09:44	0.5	2.0	0.125	4.3	7.07	0.605	29.5	4.4	24.92	Cloudy	None
09:48	0.5	2.5	0.125	4.3	7.09	0.607	17.6	3.0	25.17	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 09:48	SAMPLING ENDED AT: 09:55

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.17' YSI 556 MPM # 7 TBM# 1

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-7	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.92 feet to 11.92 feet	STATIC DEPTH TO WATER (feet BLS): 3.64	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.92 feet – 3.64 feet) X 0.09 gallons/foot = 0.75 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 10:28	PURGING ENDED AT: 10:56	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:36	1.0	1.0	0.125	7.64	7.32	0.991	213	14.3	25.23	Cloudy	None
10:40	0.5	1.5	0.125	7.64	7.20	0.890	124	5.7	25.42	Cloudy	None
10:44	0.5	2.0	0.125	7.64	7.20	0.890	72.4	5.5	25.45	Cloudy	None
10:48	0.5	2.5	0.125	7.64	7.17	0.880	56.9	3.8	25.35	Cloudy	None
10:52	0.5	3.0	0.125	7.64	7.15	0.794	42.1	3.5	25.33	Clear	None
10:56	0.5	3.5	0.125	7.64	7.14	0.786	23.6	3.4	25.35	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 10:56	SAMPLING ENDED AT: 10:59

PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.2' YSI 556 MPM # 7 TBM# 1

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

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Miami Lakes, FL 33014
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GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-6	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 3.0 feet to 13.0 feet	STATIC DEPTH TO WATER (feet BLS): 5.1	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.0 feet – 5.1 feet) X 0.09 gallons/foot = 0.69 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 11:33	PURGING ENDED AT: 11:57	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:41	1.0	1.0	0.125	5.1	7.13	0.416	68.8	6.6	25.74	Cloudy	None
11:45	0.5	1.5	0.125	5.1	7.13	0.411	66.7	5.8	25.77	Cloudy	None
11:49	0.5	2.0	0.125	5.1	7.14	0.406	76.2	5.0	25.78	Cloudy	None
11:53	0.5	2.5	0.125	5.1	7.14	0.400	80.0	4.7	25.76	Cloudy	None
11:57	0.5	3.0	0.125	5.1	7.15	0.396	105	4.3	25.75	Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 11:57	SAMPLING ENDED AT: 12:00

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Ba, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Ba, Pb, Fe	APP	500
	1	AG	1 L	-	-	-	OC Pest. 8081	APP	500

REMARKS: T.O.C. -0.2' YSI 556 MPM # 7 TBM# 1

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-31	SAMPLE ID: PACE	DATE: 3 / 27 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.6 feet to 12.6 feet	STATIC DEPTH TO WATER (feet BLS): 3.85	PURGE PUMP TYPE OR BAILER: PP#4

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.6 feet – 3.85 feet) X 0.16 gallons/foot = 1.4 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	PURGING INITIATED AT: 12:20	PURGING ENDED AT: 12:48	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
12:36	2.0	2.0	0.125	3.85	7.07	0.540	33.1	4.9	28.14	Clear	None
12:40	0.5	2.5	0.125	3.85	7.07	0.548	14.3	2.7	28.11	Clear	None
12:44	0.5	3.0	0.125	3.85	7.07	0.547	14.5	2.6	27.09	Clear	None
12:48	0.5	3.5	0.125	3.85	7.07	0.545	12.7	2.1	28.02	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelsey Cortina / EE&G	SAMPLER(S) SIGNATURE(S): Kelsey Cortina	SAMPLING INITIATED AT: 12:48	SAMPLING ENDED AT: 12:51
PUMP OR TUBING DEPTH IN WELL (feet): 8.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y [N]	TUBING Y [N] (replaced)	DUPLICATE: Y [N]	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Fe	APP	500
	1	AG	1 L	-	-	-	Dieldrin 8081	APP	500

REMARKS: T.O.C. 0.5' YSI 556 MPM # 7 TBM# 1

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
3. BLS = Below Land Surface

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-2	SAMPLE ID: PACE	DATE: 4 / 8 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 4.69 feet to 14.69 feet	STATIC DEPTH TO WATER (feet BLS): 6.4	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.69 feet – 6.4 feet) X 0.06 gallons/foot = 0.48 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.5	PURGING INITIATED AT: 10:15	PURGING ENDED AT: 10:35	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:23	1.0	1.0	0.125	6.44	6.90	0.724	OR	5.8	25.31	Cloudy	None
10:27	0.5	1.5	0.125	6.44	6.91	0.719	OR	5.2	25.39	Cloudy	None
10:31	0.5	2.0	0.125	6.44	6.92	0.709	OR	4.4	25.47	Cloudy	None
10:35	0.5	2.5	0.125	6.44	6.92	0.711	OR	3.9	25.42	Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:35	SAMPLING ENDED AT: 10:40

PUMP OR TUBING DEPTH IN WELL (feet): 10.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type: Disposable	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Dissolved As, Fe	APP	500

REMARKS: T.O.C. -0.28' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-38	SAMPLE ID: PACE	DATE: 4 / 8 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 4.3 feet to 14.3 feet	STATIC DEPTH TO WATER (feet BLS): 3.71	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.3 feet – 3.71 feet) X 0.16 gallons/foot = 1.69 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 11:29	PURGING ENDED AT: 11:53	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:45	2.0	2.0	0.125	3.74	7.08	0.577	7.22	4.6	25.77	Clear	None
11:49	0.5	2.5	0.125	3.74	7.09	0.554	6.43	3.0	25.76	Clear	None
11:53	0.5	3.0	0.125	3.74	7.10	0.549	3.18	2.8	25.75	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:54	SAMPLING ENDED AT: 12:00

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Dissolved Fe	APP	500

REMARKS: T.O.C. -0.37' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-9	SAMPLE ID: PACE	DATE: 4 / 8 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.97 feet to 12.97 feet	STATIC DEPTH TO WATER (feet BLS): 3.73	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.97 feet – 3.73 feet) X 0.16 gallons/foot = 1.48 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.5	PURGING INITIATED AT: 12:40	PURGING ENDED AT: 13:04	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
12:56	2.0	2.0	0.125	4.23	6.89	1.250	6.3	3.9	26.93	Clear w/ organic debris	None
13:00	0.5	2.5	0.125	4.23	6.92	1.187	7.13	3.4	26.90	Clear w/ organic debris	None
13:04	0.5	3.0	0.125	4.23	6.94	1.168	7.08	3.8	26.89	Clear w/ organic debris	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:05	SAMPLING ENDED AT: 13:10

PUMP OR TUBING DEPTH IN WELL (feet): 8.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Dissolved Fe	APP	500

REMARKS: T.O.C. -0.27' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Avenue Miami, FL 33125	
WELL NO: MW-5	SAMPLE ID: PACE	DATE: 4 / 8 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 3.05 feet to 13.05 feet	STATIC DEPTH TO WATER (feet BLS): 4.24	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.05 feet – 4.24 feet) X 0.09 gallons/foot = 0.79 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 13:48	PURGING ENDED AT: 14:12	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
13:56	1.0	1.0	0.125	4.26	7.29	0.843	OR	5.0	25.40	Cloudy	None
14:00	0.5	1.5	0.125	4.26	7.22	0.792	OR	2.9	25.38	Cloudy	None
14:04	0.5	2.0	0.125	4.26	7.22	0.785	OR	2.7	25.38	Cloudy	None
14:08	0.5	2.5	0.125	4.26	7.21	0.772	OR	2.3	25.33	Cloudy	None
14:12	0.5	3.0	0.125	4.26	7.22	0.769	OR	2.5	25.32	Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 14:12	SAMPLING ENDED AT: 14:20

PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. Fe	APP	500

REMARKS: T.O.C. -0.35' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-10	SAMPLE ID: PACE	DATE: 4 / 9 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 3.6 feet to 13.6 feet	STATIC DEPTH TO WATER (feet BLS): 5.75	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.6 feet – 5.75 feet) X 0.09 gallons/foot = 0.71 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 09:36	PURGING ENDED AT: 10:00	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
09:44	1.0	1.0	0.125	5.77	6.98	0.728	OR	17.8	24.73	Cloudy	None
09:48	0.5	1.5	0.125	5.77	7.00	0.722	OR	17.0	24.72	Cloudy	None
09:52	0.5	2.0	0.125	5.77	7.03	0.715	OR	16.4	24.72	Cloudy	None
09:56	0.5	2.5	0.125	5.77	7.04	0.707	OR	16.0	24.71	Cloudy	None
10:00	0.5	3.0	0.125	5.77	7.02	0.710	OR	15.7	24.70	Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:00	SAMPLING ENDED AT: 10:05

PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Pb, Fe	APP	500

REMARKS: T.O.C. -0.32' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-11	SAMPLE ID: PACE	DATE: 4 / 9 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 1.5 feet to 11.5 feet	STATIC DEPTH TO WATER (feet BLS): 3.49	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.5 feet – 3.49 feet) X 0.09 gallons/foot = 0.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	PURGING INITIATED AT: 10:33	PURGING ENDED AT: 10:57	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
10:41	1.0	1.0	0.125	3.5	7.62	0.483	OR	19.8	25.59	Dark Grey / Cloudy	None
10:45	0.5	1.5	0.125	3.5	7.61	0.482	OR	16.1	25.59	Dark Grey / Cloudy	None
10:49	0.5	2.0	0.125	3.5	7.56	0.482	OR	13.9	25.61	Dark Grey / Cloudy	None
10:53	0.5	2.5	0.125	3.5	7.55	0.481	OR	11.8	25.59	Dark Grey / Cloudy	None
10:57	0.5	3.0	0.125	3.5	7.54	0.481	OR	11.2	25.58	Dark Grey / Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:58	SAMPLING ENDED AT: 11:04

PUMP OR TUBING DEPTH IN WELL (feet): 7.5	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250 mL	HNO3	-	< 2	Total As, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Pb, Fe	APP	500

REMARKS: T.O.C. -0.19' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. 3. BLS = Below Land Surface

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

EE&G ENVIRONMENTAL SERVICES, LLC

5751 Miami Lakes Dr.
Miami Lakes, FL 33014
Phone: (305) 374-8300 Fax: (305) 374-9004

GROUNDWATER SAMPLING LOG

SITE NAME: Melreese Golf Course (2018-3057)	SITE LOCATION: 1802 NW 37th Ave, Miami, FL 33125	
WELL NO: MW-12	SAMPLE ID: PACE	DATE: 4 / 9 / 2019

PURGING DATA (2 / 2B / 3)

WELL (PVC) DIAMETER (inches): 1.5	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 2.35 feet to 12.35 feet	STATIC DEPTH TO WATER (feet BLS): 3.3	PURGE PUMP TYPE OR BAILER: PP#2

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.35 feet – 3.3 feet) X 0.09 gallons/foot = 0.81 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.0	PURGING INITIATED AT: 11:26	PURGING ENDED AT: 11:50	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	COND. (mS/cm)	TURBIDITY (NTUs)	DISSOLVED OXYGEN (% Saturation)	TEMP. (°C)	COLOR (describe)	ODOR (describe)
11:34	1.0	1.0	0.125	3.87	7.47	0.807	OR	28.3	25.20	Dark Grey / Cloudy	None
11:38	0.5	1.5	0.125	3.87	7.41	0.781	OR	23.5	25.19	Dark Grey / Cloudy	None
11:42	0.5	2.0	0.125	3.87	7.37	0.754	OR	19.3	25.18	Dark Grey / Cloudy	None
11:46	0.5	2.5	0.125	3.87	7.35	0.748	OR	17.4	25.17	Dark Grey / Cloudy	None
11:50	0.5	3.0	0.125	3.87	7.32	0.736	OR	16.0	25.16	Dark Grey / Cloudy	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **1.5"** = 0.09; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Russell Fernandez / EE&G	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:50	SAMPLING ENDED AT: 11:56

PUMP OR TUBING DEPTH IN WELL (feet): 8.0	TUBING MATERIAL CODE: HDPE/S	FIELD-FILTERED: [Y] N Filtration Equipment Type:	FILTER SIZE: 1 µm

FIELD DECONTAMINATION: PUMP Y [N] TUBING Y [N] (replaced) DUPLICATE: Y [N]

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	PE	250 mL	HNO3	-	< 2	Total As, Pb, Fe	APP	500
	1	PE	250 mL	HNO3	-	< 2	Diss. As, Pb, Fe	APP	500

REMARKS: T.O.C. -0.28' YSI 556 MPM # 7 TBM# 2

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

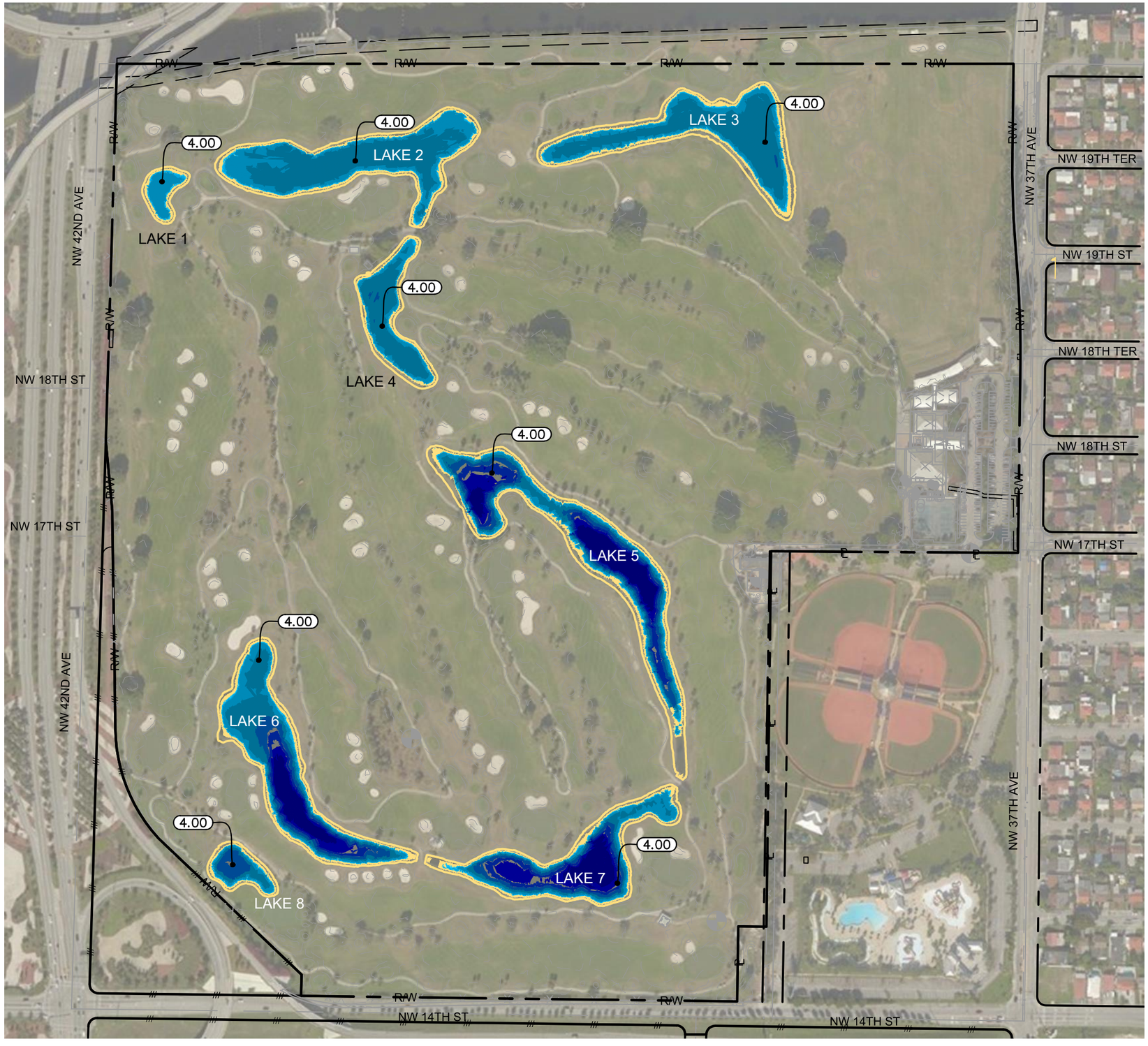
NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
3. BLS = Below Land Surface
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

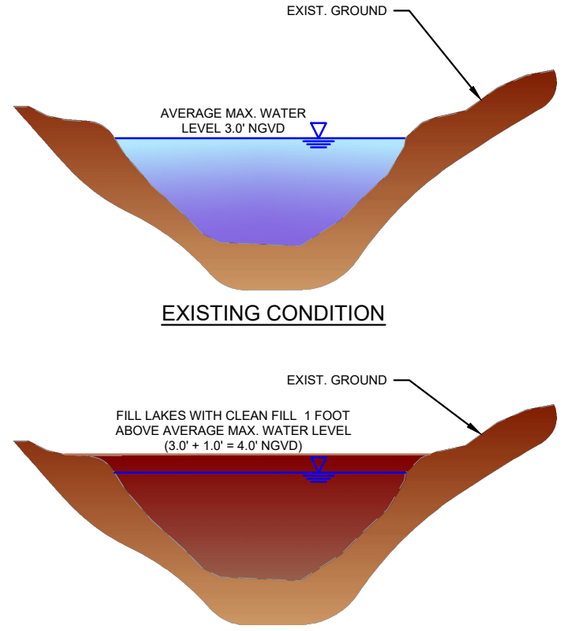
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 13, 2017

APPENDIX E

PRELIMINARY DESIGN DOCUMENTS





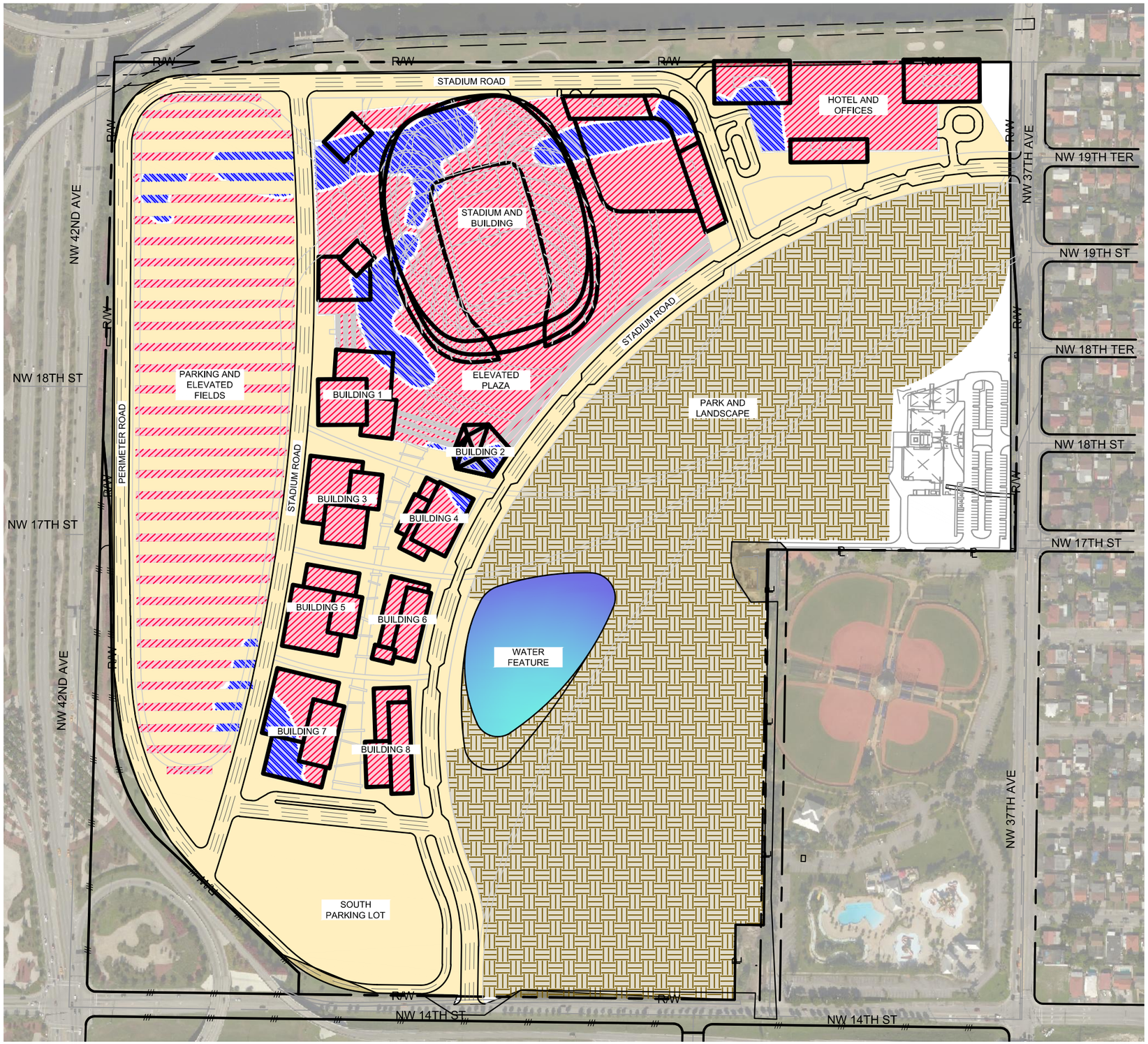
Kimley»Horn

MIAMI FREEDOM PARK

LAKE FILL VOLUMES
July 22, 2019

0 150 300 600

NORTH



LEGEND

- LAKES FILLED WITH CLEAN FILL FROM PHASE 1
- EXCAVATE UNSUITABLE MATERIAL FROM UNDER STRUCTURES AND SLABS ON GRADE
- CUT EXISTING GRADE TO SUBGRADE ELEVATION, FILL WITH EXCAVATED MATERIAL, STABILIZE AND REINFORCE WITH GEO-TEXTILE
- FILL WITH EXCAVATED MATERIAL ONE FOOT BELOW FINISHED GRADE

Kimley»Horn

MIAMI FREEDOM PARK

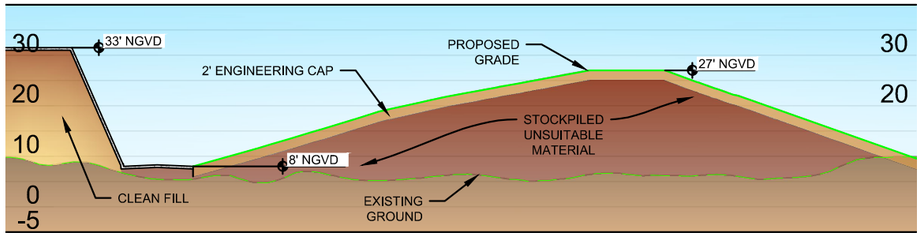
UNSUITABLE MATERIAL EXCAVATION
July 22, 2019

0 150 300 600

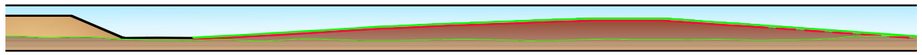
NORTH

LEGEND:

PARK AND LANDSCAPE



FG / E-3 FINISHED GRADE SECTION
N.T.S.
VERTICAL SCALE EXAGGERATION 1:5



FG / E-3 FINISHED GRADE SECTION
N.T.S.
NO VERTICAL SCALE EXAGGERATION

Kimley»Horn

MIAMI FREEDOM PARK

GENERAL GRADING
July 22, 2019

0 150 300 600 NORTH

SEE DETAIL "A"

INFERRED EXTENT OF AMMONIA-AFFECTED GROUNDWATER

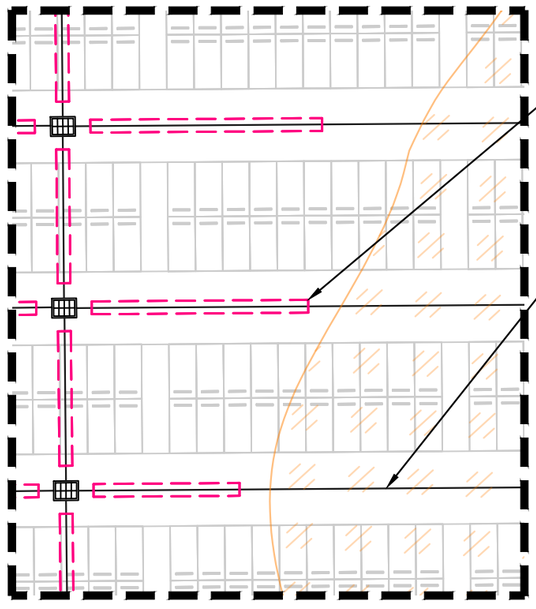
INFERRED EXTENT OF ARSENIC-AFFECTED GROUNDWATER

INFERRED EXTENT OF IRON-AFFECTED GROUNDWATER

LEGEND:

- AMMONIA
- IRON
- ARSENIC

DETAIL "A"



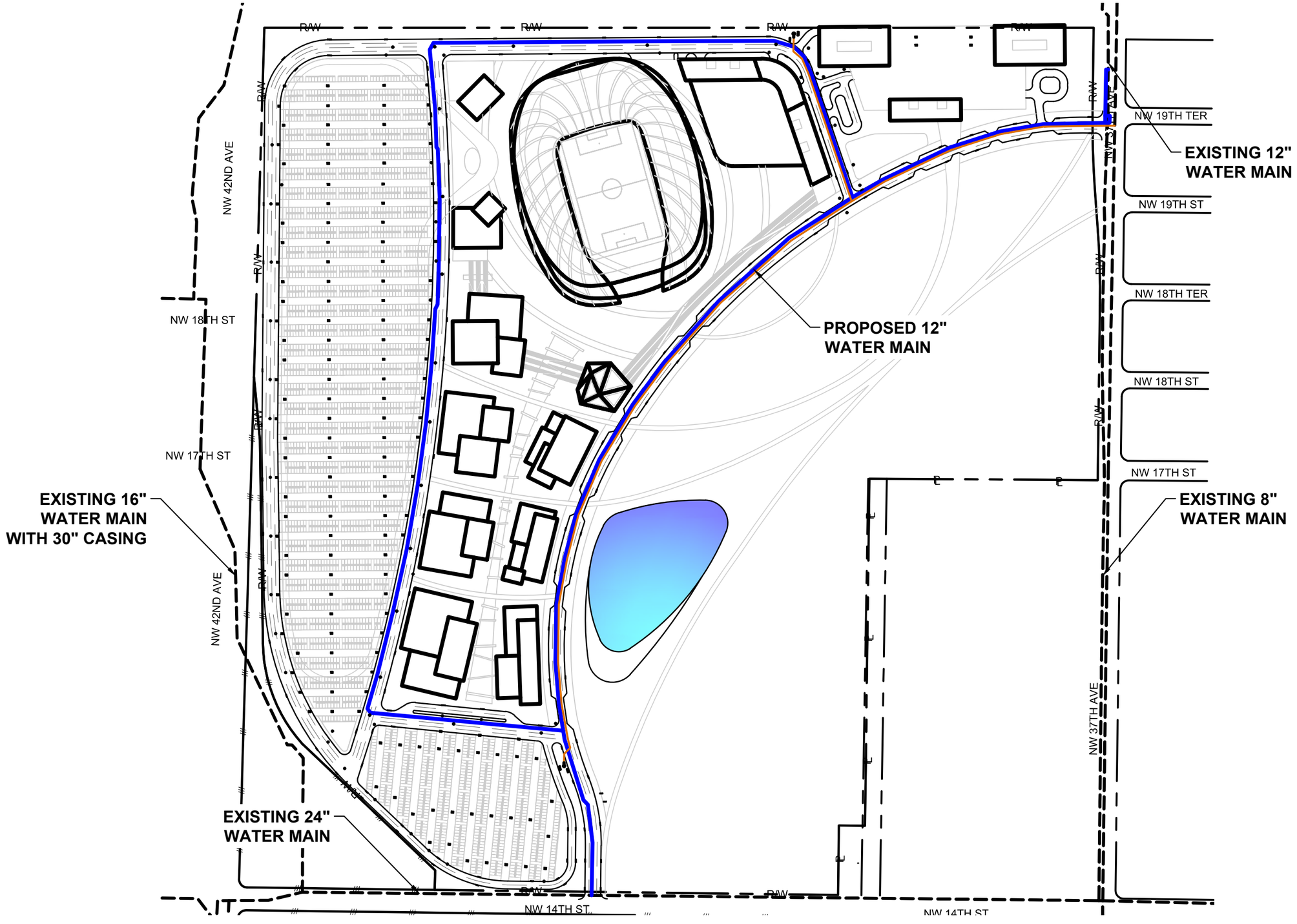
Kimley»Horn

MIAMI FREEDOM PARK

PROPOSED DRAINAGE INFRASTRUCTURE
July 22, 2019

0 150 300 600

NORTH



Kimley»Horn

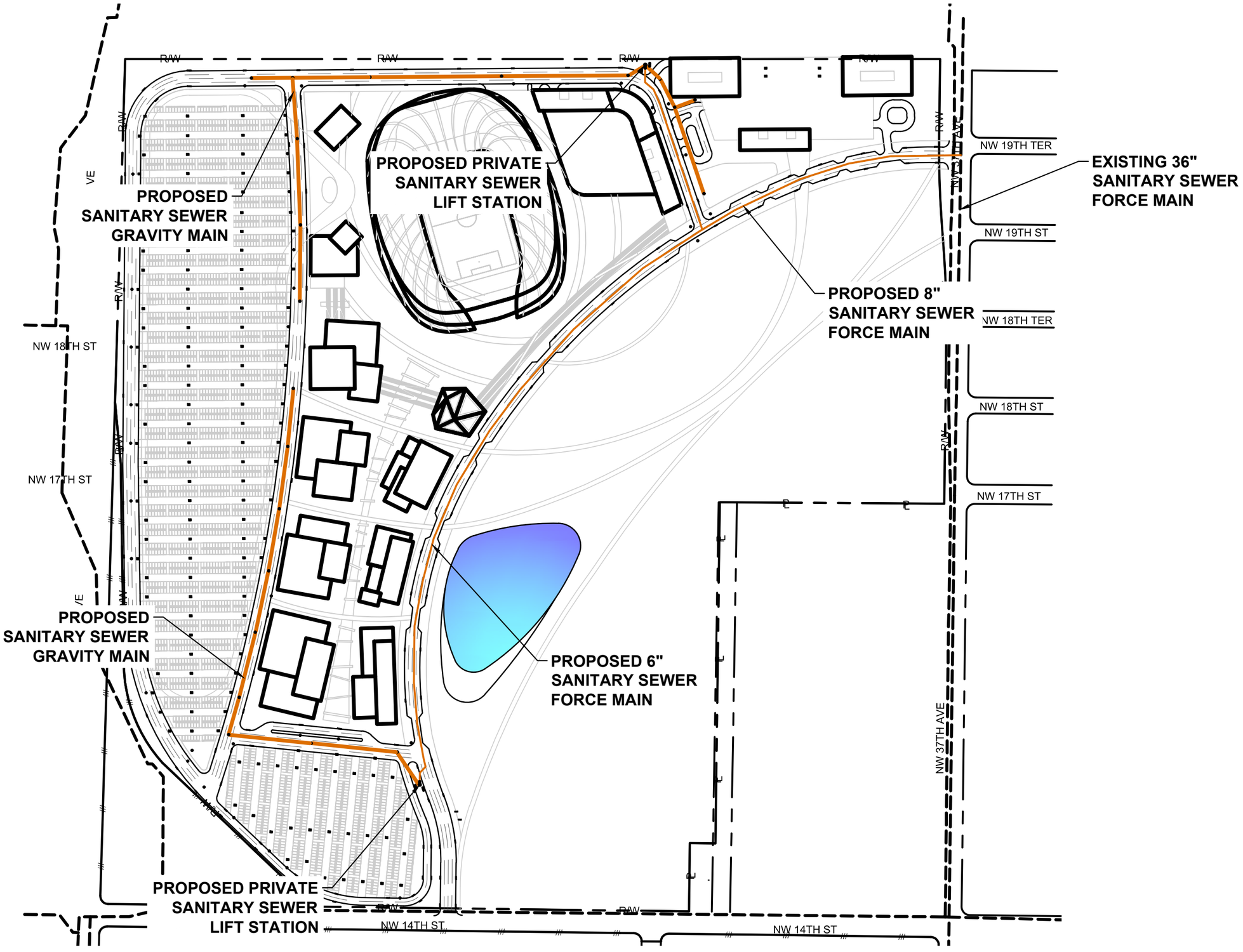
MIAMI FREEDOM PARK

PROPOSED WATER INFRASTRUCTURE

July 22, 2019

0 150 300 600

NORTH



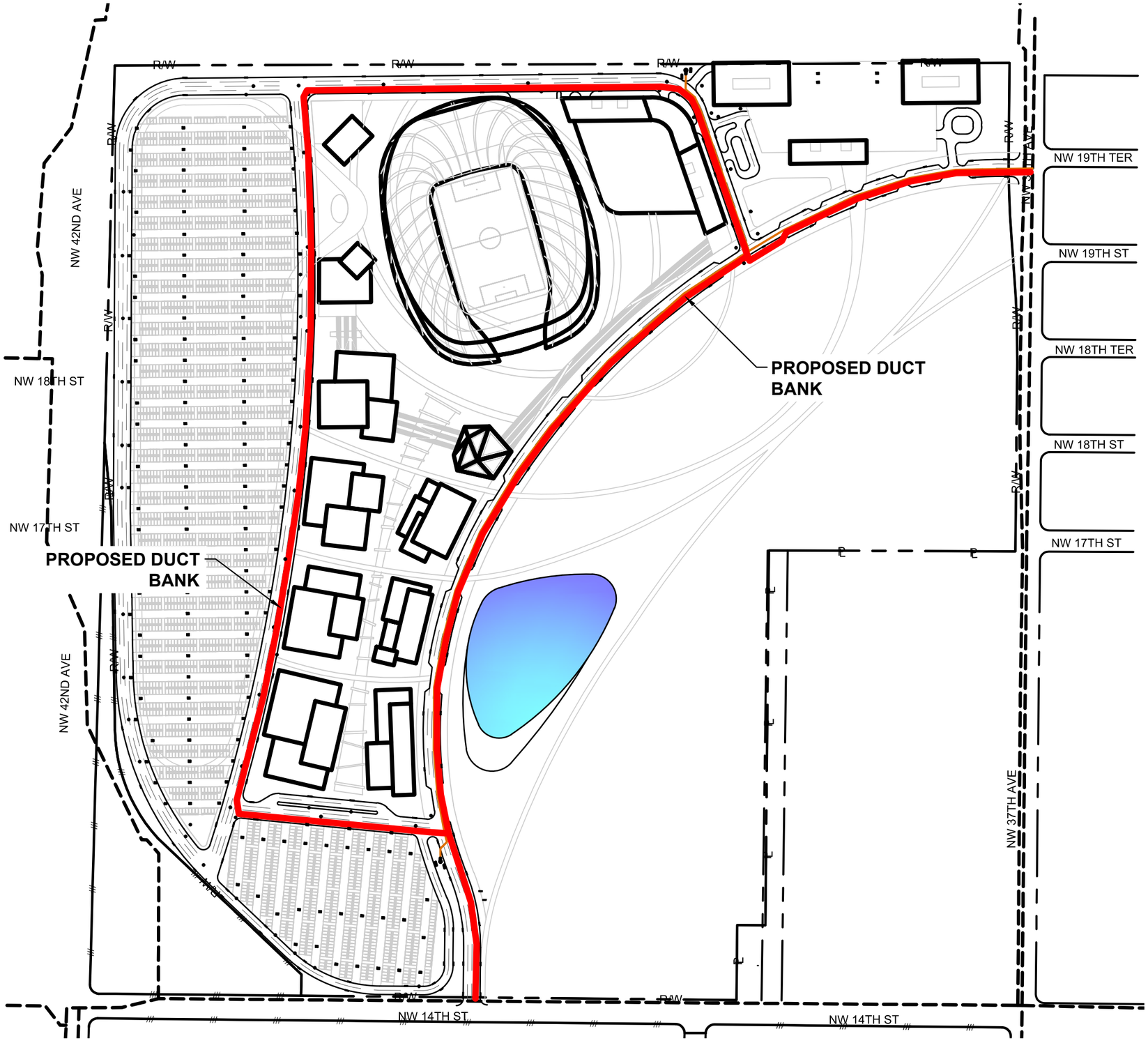
Kimley»Horn

MIAMI FREEDOM PARK

PROPOSED SEWER INFRASTRUCTURE
July 22, 2019

0 150 300 600

NORTH



Kimley»Horn

MIAMI FREEDOM PARK

PROPOSED DRY UTILITIES INFRASTRUCTURE

July 22, 2019

0 150 300 600

NORTH